

LEATH & ROSS'S HOMEOPATHIC PHARMACIES

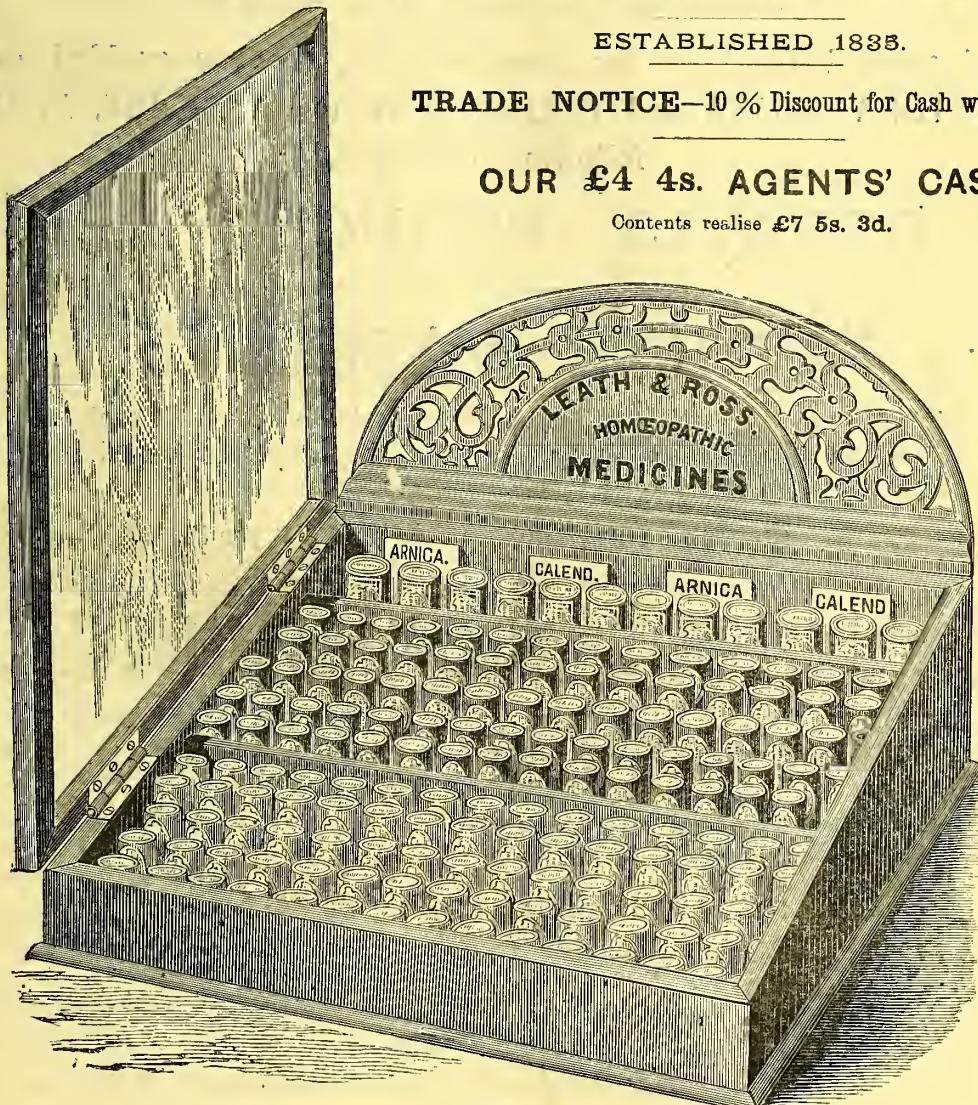
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WHOLESALE PRICE LIST OF MEDICINES PUT UP READY FOR SALE.

	TO ACCOUNT.	FOR CASH.		TO ACCOUNT.	FOR CASH.
LOBULES.—Sixpenny Tubes	... 3/0 doz.	2/9 doz.	PILULES.—Sixpenny Bottles	... 3/0 doz.	2/9 doz.
Ninepenny "	... 4/6 "	4/1 "	Ninepenny "	... 4/6 "	4/1 "
Shilling "	... 6/0 "	5/5 "	Shilling "	... 6/0 "	5/ " "
TINCTURES.—Sixpenny Bottles	... 3/0 "	2/9 "	TRITURATIONS.—Sixpenny Bottles	... 4/0 "	3/7 "
Ninepenny "	... 4/6 "	4/1 "	Ninepenny "	... 4/6 "	4/1 "
Shilling "	... 6/0 "	5/5 "	Shilling "	... 6/0 "	5/5 "

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REGISTERED

"VASELINE"

JELLY

TRADE MARK.

With increased facilities for Manufacturing, we are enabled to offer
WHITE VASELINE and PERFUMED WHITE VASELINE, in the
following packages,

AT GREATLY REDUCED PRICES.

"WHITE VASELINE."

In Collapsible Tubes	... ... ...	... 1 dozen in box, -/8 each, 5/- per doz.
In 2-oz. Bottles, Cardboard Cases, No. 1 size	... ...	1 dozen in box, 1/-, 8/-,,
In 5-oz. Bottles, Cardboard Cases, No. 2 size	... ...	$\frac{1}{2}$ dozen in box, 2/-, 15/-,,
1-lb. Tins, 1/9 per lb.	5-lb. Tins, 1/6 per lb.	

"PERFUMED WHITE VASELINE."

In Collapsible Tubes	... ... ...	1 dozen in box, -/9 each, 6/- per doz.
In 2-oz. Bottles, Cardboard Cases, No. 1 size	... ...	1 dozen in box, 1/-, 8/6,,
In 5-oz. Bottles, Cardboard Cases, No. 2 size	... ...	$\frac{1}{2}$ dozen in box, 2/-, 16/-,,
In Bottles with Glass Stoppers, superior style of package, our Present "Pomade No. 3"	... ...	$\frac{1}{2}$ dozen in box, 3/-, 28/-,,
1-lb. Tins, 2/9 per lb.	5-lb. Tins, 2/6 per lb.	

CAUTION.—The Trade are cautioned that the word
"VASELINE" is the Registered Trade Mark of this Company for
all their Emollient, Remedial, and other Preparations of Petroleum.

CHESEBROUGH MANUFACTURING CO. (NEW YORK),

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SOLE PROPRIETORS AND MANUFACTURERS OF THE "VASELINE" PREPARATIONS.

PRICE LISTS POST FREE.

FLETCHERS'

Concentrated Liquors.

YOUR ATTENTION IS INVITED TO THE FOLLOWING OPINIONS
OF PHARMACISTS:—

*From Mr. S. DEAN, Dispensing Chemist,
320 ROMAN ROAD, E.*

For some time past I have used your **Concentrated Liquors for Syrups**.

I have found them a great convenience, and very much more satisfactory than keeping the Syrups in stock, especially as the demand for some of these preparations is very limited.

November 10, 1883.

*Yours truly
Samuel Dean.*

From Mr. S. LAWRENCE, Dispensing Chemist, OBAN.

During the past year I have thoroughly tested most of your **Concentrated Liquors**, and have derived much satisfaction from their use, now finding my Syrups uniform in strength, appearance, and flavour; and as it is of the utmost importance that these qualities should predominate in all pharmaceutical preparations, I can confidently recommend your **Liquors** to all dispensing chemists.

*Yours faithfully
Samuel Lawrence*

*From Mr. TOM WATERHOUSE, Dispensing Chemist,
UXBRIDGE.*

I have thoroughly tested your **Concentrated Liquors**, and I cannot speak too highly of them. I now use them, to the exclusion of all other similar preparations, in my dispensary. They save time, are very reliable, and come as a boon to dispensing chemists. I get them regularly through my drug house.

*Truly yours,
Tom Waterhouse*

*From Messrs. HOPWOOD & SON, Pharmaceutical
Chemists, RICHMOND.*

We have much pleasure in bearing testimony to the very satisfactory results which we have always obtained from the use of your valuable preparations. We have now used the **Concentrated Liquors** for some considerable time, and have never once heard any complaint arising from want of uniformity in the result obtained, a state of affairs scarcely possible under the old method of keeping the ready-made Syrups.

*Yours faithfully
Hopwood & Son.*

Trial Samples free of cost on application to the Sole Manufacturers—

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ECONOMICAL

COFFEE FOR THE MILLION

CONVENIENT

Forty large Cups of delicious Coffee made without trouble, for One Shilling, by using

**SYMINGTON'S
ESSENCE OF COFFEE & CHICORY.****ESSENCE OF PURE COFFEE
Finest Quality.****ESSENCE OF DANDELION COFFEE.**

A genuine preparation guaranteed to be prepared from the Dandelion, and containing no Chicory.

"EDINBURGH" COFFEE AND MILK.**"EDINBURGH" COCOA AND MILK.**

Prepared Taraxacum or Dandelion.

Prepared Taraxacum with Coffee.

TO BE HAD FROM ALL DEALERS



GOLD MEDAL awarded New Zealand Exhibition, 1882; and Calcutta Exhibition, 1884.
QUALITY UNSURPASSED. A TRIAL SOLICITED.

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"The Essence of Dandelion Coffee is really an excellent substitute for Coffee, and will, we think, be an advantage to many bilious and dyspeptic patients."

EXTRACT FROM "BRITISH MEDICAL JOURNAL."

"Symington & Co.'s Coffee Essences have a standard reputation, and possess great merit. The Coffee Essence must be prepared in *Vacuo* at a low temperature, as the aroma of the Coffee is well preserved; in its essential qualities it does not differ in any way from a cup of Coffee made in the ordinary way. The Coffee and Milk is extremely convenient for travellers, bachelors, &c., or wherever it may be convenient to have at hand a preparation which requires only the addition of boiling water to make a cup of *good Milk-Coffee*."

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THOS. SYMINGTON & CO., CHEMISTS, EDINBURGH.



**THE NEW PATENT
PERFORATED TOILET PAPER & FIXTURE
SHOULD BE IN EVERY HOUSEHOLD.**

This Paper is strongly recommended for family and hotel use, combining, as it does, great economy and neatness, with protection to health. Once tried always continued. Gives great satisfaction.

One Fixture will last a lifetime, and rolls of paper to refill can always be easily obtained and readily attached.

1 Roll Paper, with nickel holder ...	... ...	2/6
1 Roll Paper, with bronzed holder ...	... ...	2/-
1 Roll Paper, with 1,000 sheets, to refill either holder ...		1/-

THE TRADE SUPPLIED.

THE BRITISH PATENT PERFORATED PAPER CO., LTD.

12 LONG LANE, WEST SMITHFIELD, LONDON, E.C.

SQUIRE'S CHEMICAL FOOD.

[*Syrup. Ferri Phosph. Comp. (Squire).*]

History. This agreeable preparation was originally introduced by the late Professor EDWARD PARRISH, about the middle of the present century; he subsequently much improved his original formula.

In its present perfected form the sole right of manufacture has been acquired by Messrs. SQUIRE, who have for many years acted as Professor PARRISH's Agents in this country.

Properties. It is a complex solution of IRON, LIME, SODA, and POTASH, in a PHOSPHORIC SYRUP (*containing the Iron in the Ferrous condition*). It thus contains no single substance which is not a constituent of the blood and tissues, and therefore may be administered daily for a lengthened period.

Uses. Physicians have prescribed it for the last twenty years more extensively than any other preparation of the kind. They have found it useful in a great variety of maladies, and especially suitable as an addition to the diet of delicate children and in all cases of pallor and general weakness in adults as well as children.

SQUIRE,

Chemist on the Establishment in Ordinary to the Queen,
413 OXFORD STREET, LONDON.

STAND, INTERNATIONAL HEALTH EXHIBITION, No. 165, SOUTH GALLERY, where original Diplomas and Certificates will be submitted, and explanations respecting continual misrepresentation given. Remember Stand 168, Main Building.

NOTA BENE.

1.—M. Hoff has no longer agent in London.

CAUTION.—See that you get the right old introduced article, there being now others of similar name in the market.

2.—Be careful not to be misled by pamphlets and circulars into buying any other preparation but the OLD GENUINE and original HAMBURG HOFF'S MALT EXTRACT.

3.—The genuine and original HAMBURG HOFF'S preparation has NO PORTRAIT on the label. The signature LEOPOLD HOFF has to be on all labels.



Leopold Hoff

The name M. HOFF, HAMBURG, and the Signature above LEOPOLD HOFF have to be on all labels of the OLD GENUINE and original HAMBURG HOFF'S MALT EXTRACT.

20 years before the Public of Great Britain.

Letter from the First Physician of Her Majesty the Empress Augusta of Germany, Queen of Prussia, to

LEOPOLD HOFF, Esq., Hamburg.

Dear Sir,
Her Imperial and Royal Majesty has commanded me to inform you of Her Imperial Majesty's pleasure to give "YOUR Preparation" a trial. Please send, etc. Allow me to present you with the expression of my highest consideration with which I remain, Yours truly,
(Dr.) SCHLIEP.

Her Imperial Majesty's First Physician and Medical Adviser.
Baden Baden,
October 3rd, 1883.

To be obtained from all respectable Wholesale Houses in the United Kingdom, and from

LEOPOLD HOFF'S LONDON HOUSE, 29 NEW BRIDGE STREET, LONDON, E.C.

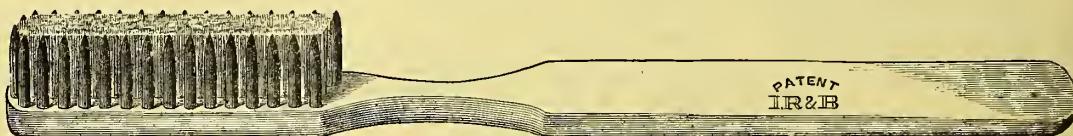
PATENTED IN ENGLAND, FRANCE, AND AMERICA.

S. MAW, SON & THOMPSON'S

ROYAL PATENT

I. R. & B. TOOTH-BRUSHES,

MADE OF INDIA-RUBBER & BRISTLES.



PRICE TO THE TRADE, 8/- PER DOZEN.

From THE JOURNAL OF THE BRITISH DENTAL ASSOCIATION, Jan. 15, 1884

NEW INVENTIONS.

MESSRS. MAW'S PATENT I. R. & B. TOOTH-BRUSHES.

WE have received from Messrs. Maw & Co., of Aldersgate Street, specimens of a new pattern Tooth-brush, with the above designation, which they are about to bring under the notice of the profession. The initials refer to the "India Rubber and Bristles, of which the brushes are composed. They consist of a narrow bristle brush of the ordinary type, surrounded by a single row of stems of soft red rubber of nearly the same length. They are both efficient and pleasant to use, and we should anticipate that the superior durability and elasticity of the rubber will afford so much support to the bristles as to keep them in shape and working order for a much longer time than an equally soft ordinary bristle brush would wear. The chief object of the rubber addition is, however, to prevent abrasion of the gums, and it appears to answer this purpose very satisfactorily. To persons with tender, or partially edentulous mouths brushing the teeth is an unpleasant and even painful operation; Messrs. Maw's brushes will certainly reduce the discomfort in such cases to a minimum.

MANUFACTURED BY

S. MAW, SON & THOMPSON, 7 to 12 Aldersgate Street, London

CONDY'S FLUID—IMITATIONS.

INJUNCTIONS.

In the High Court of Justice.

CONDY & MITCHELL, LIMITED, v. FLINDERS.

By Order of Vice-Chancellor Sir James Bacon, dated the 11th June, 1884, the Defendant was perpetually restrained from infringing the Plaintiffs' Trade Marks, and from selling any Disinfecting Fluid in wrappers with any imitation of the Plaintiffs' labels, and from selling any Disinfecting Fluid not being of the Plaintiffs' manufacture as or for the goods of the Plaintiffs by using upon the bottles containing such Disinfecting Fluid a label colourably differing from the Plaintiffs' label upon bottles in which their Disinfecting Fluid known as Condy's Fluid is sold.

J. SEYMOUR SALAMAN,

12 KING STREET, CHEAPSIDE.

Solicitor to the Trade Mark Protection Society.

In the High Court of Justice.

CONDY & MITCHELL, LIM., v. COLDWELL & CO.

I, DAVID BRAINERD COLDWELL, of Lavender Hill, Clapham Junction, in the County of Surrey, Chemist, having inadvertently and in ignorance of the legal rights of the above-named Plaintiffs placed upon bottles containing a disinfecting fluid prepared by me Labels which in colour and wording are similar to those in use by the above-named Plaintiffs on bottles containing "CONDY'S FLUID," hereby express my regret, and have consented to a perpetual Injunction being granted in the above Action with costs, the said Plaintiffs consenting to forego any claim for damages against me.

Dated this 24th day of July, 1884.

(Signed)

DAVID B. COLDWELL,

Trading as COLDWELL & CO.

J. SEYMOUR SALAMAN,

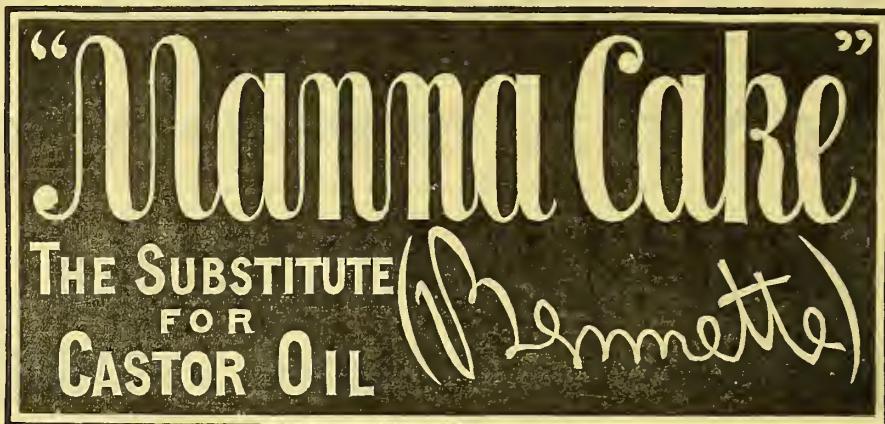
Solicitor to the Trade Mark Protection Society.

TO BRITISH, COLONIAL, AND FOREIGN CHEMISTS.

RECOMMENDED BY THE FACULTY.

Price—
12/-
per
Gross.

Retail,
1½d. each
(18/- per
Gross)



Registered Trade Mark, No. 22,133.

The mildest and most agreeable aperient known. A first-class Family Medicine for every household. Highly approved of by adults; children take it readily and do not suspect its properties. A most suitable aperient for women at all times, and during the whole course of pregnancy. Does not gripe, and leaves no bad effect as Castor Oil does. A digestive tablet and sweet to the taste.

Dr. McCANN, Orchard-Hey, Liverpool, sent the following letter:—December 22, 1881.—“The aperient action of the ‘MANNA CAKE’ is decidedly good. Mildly energetic, free from griping, and to be depended on when a mild but certain aperient is needed. It is also an effectual WORM CAKE. Being pleasant to the taste (it is mainly sugar), its easy administration very strongly recommends its use, especially in fever cases, where all excitement should be avoided.”

TO COLONIAL AND FOREIGN HOUSES.

Terms, 12s. per gross, less discount for cash against shipping documents. A liberal supply of printed matter is included in this, the consignee issuing such as he thinks best. On orders of 20 gross and upwards at a time printed matter is supplied in any language. On orders over 100 gross arrangements will be made for advertising abroad to help the sale.

EXTRACTS FROM LETTERS.

“Please forward me another 4 gross. Its pleasant taste and easy operation constitute it a favourite medicine in my own, as in other families.”

A. T. BORTHWICK, Chemist, Selkirk.

“A Physician in the West of England says he gave Calomel and Jalap in repeated doses without effect, but a MANNA CAKE acted almost immediately.”

“The article is selling freely”

W. H. HAYWARD, Chemist, Trowbridge, Wilts.

“Send another 4 gross. My counter sale last week was over 10 dozen.” [Fourth order.] JOHN LEA, Chemist, Folkestone.

“It answers the purpose admirably, and gives great satisfaction. It (or you) may justly be called ‘The Children’s Friend.’” H. T. DOBLE, Chemist, Tavistock.

“It is one of our best preparations.”

HENRY BECK, Chemist, Alnwick, Salop

“The Manna Cake is selling well, and gives great satisfaction. It is an excellent preparation.” S. STEPHENS, Chemist, Huddersfield.

[Mr. Stephens has contracted for 150 gross.]

“It is singularly mild and efficacious. I certainly consider it a splendid substitute for Castor Oil.” A. CHRISTIE, Chemist, Newton-Ashbot, Devon.

“We find that the Manna Cake sells well, and, so far as we can ascertain, gives great satisfaction. It is taking a good place among the established aperient medicines, and is much liked by children, as well as by adults.” DAVIDSON & LESLIE, Chemists, Belfast.

“It is with great pleasure I certify to the efficiency of your Manna Cake. It is tempting in appearance and pleasant to taste, and has given every satisfaction; its merits are indisputable; it has wrought wonders in this neighbourhood.” JOHN SKINNER, Chemist, 558 and 846 Govan Road, Govan

Advertisements will be continued in the Trade Journals until every Chemist feels it to his interest to stock the Manna Cake.

P.S.—There have been over 750,000 Manna Cakes ordered.

WHOLESALE AGENTS.

LONDON—Barclay & Sons; Butler & Crispe; Edwards & Sons; Hovenden & Sons; May, Roberts & Co.; Maw, Son & Thompson; Newbery & Sons; Sanger & Sons; Sutton & Co.; Thompson, Millard & Co. PROVINCIAL—Evans, Gadd & Co. (Limited), Exeter; Battle, Son & Maltby, Lincoln; J. H. Blunt & Son, Northampton; Raimes & Co., Edinburgh; W. & R. Hatrick & Co., Glasgow; Glasgow Apothecaries’ Co., Glasgow; Ismay & Son, Newcastle-on-Tyne; John Thompson, Liverpool; Woolley, Sons & Co., Manchester; Goodall, Backhouse & Co., Leeds; Mason and Proctor & Co., Leeds; W. Foggett & Co., Thirsk; Rainor & Co., York; Smith & Son, Norwich.

COLONIAL—Faulding & Co., Adelaide; Felton, Grimwade, & Co., Melbourne; Elliott Brothers, Sydney; Elliott Brothers, Brisbane; The New Zealand Drug Company, Auckland, Christchurch, and Wellington, New Zealand; Smith, Stanistreet & Co., Calcutta; B. G. Lennon & Co., Cape Colony.

London Warehouse—GORDON & CO., 11 Long Lane.

WHO ARE PREPARED TO EXECUTE ORDERS TO ANY AMOUNT.

*The MANNA CAKE is sent out in Handsome Decorated Tin Boxes, suitable for display on the Counter.
SHOW TABLETS SUPPLIED FREE ON APPLICATION.*

SYDNEY, NEW SOUTH WALES,

June 11, 1884.

ENO'S FRUIT SALT

IN EQUITY.

In Equity.—(Before his Honour the PRIMARY JUDGE.)

ENO v. DAVIES AND ANOTHER.

Mr. J. E. Solomon, Q.C., and Dr. Donovan, instructed by Mr. De Lissa, for the plaintiff; Mr. Owen, Q.C., and Mr. Nash, instructed by Messrs. Bull & Bull, for the defendants.

This is a suit instituted by James Crossley Eno, of Pomeroy Street, Hatcham, Surrey, England, to have the defendants, William Davies and James Channon, trading as William Davies & Co., Goulburn, and Harbour Street, Sydney, ordered to take a certificate of registration for a trade mark called "The Australian Fruit Salt" off the file at the Registrar-General's office, and also to have them restrained by perpetual injunction from using the title to any other commodity. The plaintiff claimed that the trade mark was an infringement of his own, viz., Eno's Fruit Salt, Fruit Saline, and Fruit Powder. Consequential damages were also claimed. The defendants' mark was registered in this colony two months before plaintiff's.

His HONOUR, in giving judgment, said he had no doubt that the case came within the principle laid down in the cases which had been cited wherein the Court enjoined a defendant not to continue the use of his trade mark. Although there were some important points of distinction in the goods, still there were points of resemblance which were calculated to induce persons to believe that they were obtaining the plaintiff's, when in reality they were buying the defendants'. The bottles were about the same weight and shape, and a purchaser of the defendants' would hardly know he had not got Eno's until he opened the package. Looking at the two bottles, he thought purchasers were exceedingly likely to be misled, because a man was not supposed to carry his last bottle with him in order to see that he was getting the same article, and persons buying were not supposed to be always suspicious that frauds were being practised upon them. He considered the term "fruit salt" sufficiently distinctive to be in itself a trade mark, and it had been proved in evidence that people generally asked for it by that name. The resemblance in the bottles and in the printing on the wrappers was so close that he regretted he could not say that it resulted from accident, or was consistent

with innocence. The distinctions seemed to have been carefully studied in order to escape, if possible, the results of imitation. The defendants had brought out their article just when the plaintiff's had taken a gigantic jump in public estimation, and had acted in such a way as to induce him to believe that they intended to lead the public to think they were buying plaintiff's goods when they were served with theirs. There was fraud which tradespeople unfortunately did not think much of, but which the Court always regarded with the greatest reprehension. He did not think the argument as to the second section of the Act had very much to do with the case. When the defendant registered he must have obviously known that Eno's Fruit Salt was in the market. He had no more right to register than he had to sell. He did not think the Act in any way interfered with the powers which the Court of Equity possessed before it became law. The Act had only been passed to afford a speedier and readier remedy to those who registered under it. The 7th section evidently contemplated that such a suit as the present one should be taken by a person who considered he had been wronged, as the plaintiff had been. He would grant the injunction in the terms of the prayer, restraining the defendants from using the trade mark, on the ground that it was an infringement on the plaintiff's prior and exclusive claim. He would order them to take such proper and necessary steps as were possible to take the certificate of registration off the file, but if a power greater than theirs stood in the way in the matter, they would be relieved from attachment. He did not see how he could compel the Registrar-General, who was an officer appointed by Parliament to do a certain thing, to cancel the certificate, especially as he had not been made a party to the suit. The certificate, however, could be delivered up, because it was part of the subject matter of the suit. He would order the defendants to pay costs up to the hearing, and would direct an issue as to consequential damages to be tried before a special jury of four in the Jury Court on a day to be named. He would make the question of costs of these further proceedings dependent upon the result, because it might be that he would not give plaintiff his costs if he did not recover a substantial amount.

CAUTION.—Legal Rights are protected in every Civilised Country.

SOLD BY ALL CHEMISTS.

Directions in Sixteen Languages how to prevent disease.

PREPARED ONLY AT

ENO'S FRUIT SALT WORKS, HATCHAM, LONDON, S.E.,
BY J. C. ENO'S PATENT.

BRITISH MEDICAL ASSOCIATION, BELFAST MEETING, 1884.

SPECIAL ATTENTION

IS DRAWN TO OUR

LIST OF FLUID EXTRACTS

ON PAGE 113,

Specimens of which were brought under the notice of the Medical Profession at the recent meeting in Belfast.

Descriptive Catalogues for distribution among medical men, giving full particulars as to doses, &c., free on application.

EVANS, SONS & CO.,
LIVERPOOL.

EVANS, LESCHER & WEBB,
LONDON.

SPECIAL NOTICE.

The price for stamping Names and Addresses on the tops of

HUNT'S BOTTLE CAPS

IS NOW REDUCED TO 4d. PER GROSS.

OF ALL WHOLESALE HOUSES, OR—

W. F. HUNT & Co., 3 to 5 Little Windmill St., London, W.
MANUFACTORY—MARSEILLES.



COWAN'S VACCINATION SHIELDS, IMPROVED.

3/3. 7/, & 12/ per doz. Adult size, 5/3, 9/, & 15/ per doz.

Be sure and ask for COWAN'S, for any other will hurt your sale for this article.
To be had of all Wholesale Chemists and Sundriesmen.

W. COWAN,
Inventor and Maker of the Vaccination Shield,
239 GEORGE STREET, GLASGOW.

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WORKS FOR CHEMISTS AND STUDENTS.

PARRISH'S PHARMACY. Fifth Edition this day. Half Morocco; price 30s."There is nothing to equal 'Parrish's Pharmacy' in this or any other language."—*Pharmaceutical Jour.***REMSEN'S PRINCIPLES OF THEORETICAL CHEMISTRY.** New Edition this day, revised and brought up to date. Price 7s. 6d.**INCE'S LATIN GRAMMAR OF PHARMACY.** Second Edition now ready. Price 4s.

For the use of Medical and Pharmaceutical Students; with an Essay on the Reading of Latin Prescriptions. By JOSEPH INCE, F.C.S., F.L.S., A.K.C. Lond., formerly Examiner and Member of Council of the Pharmaceutical Society of Great Britain.

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Analytical Reports on all the Bottled Waters. By Professor TIGHEBORNE, F.C.S., LL.D., and Dr. PROSSER JAMES, M.R.C.P. Lond.

Send for Catalogue, post free.

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Consulting Physician (late Senior Physician) to the Royal Hospital for Diseases of the Chest, &c.

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PRACTICAL PHARMACY, MATERIA MEDICA AND THERAPEUTICS.**A MANUAL** containing sections on Compounding, Dispensing, Prescription writing and reading, Latin abbreviations, Lithographed Recipes (parsed and translated), strengths, solubilities, doses, combinations of all the P.B. Drugs, and a notice of the more important new ones, with Formulae, &c. By W. WHITLA, M.D., Consulting Physician to the Ulster Hospital for Women.

"Should be in the hands of every Chemist."

LONDON : H. RENSHAW, 356 STRAND. 8vo. 10s. 6d.

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for Cash with Order.**

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New Catalogue One Stamp. To the Pharmaceutical Society of Great Britain

CHEAP EDITION of KILNER'S PHARMACY.

Just published, with Supplements, pp. 905, 15s.

**KILNER'S COMPENDIUM OF MODERN PHARMACY
AND DRUGGISTS' FORMULARY.**"Contains much and varied information useful to every Pharmacist."—*Pharm. Journal.*"We have already had occasion to notice a previous edition of this book very favourably. The additions, by way of Supplement, give us the latest formulæ of America and other nations, both official and non-official. The work is a most useful one, and the painstaking care of the author is apparent on every page. It is a book that the Pharmacist should always have at hand for reference. It is well printed, and supplied with copious indexes. We shall refer later on to Mr. Kilner's book. *Monthly Mag. of Pharmacy*, January, 1884.

LONDON : HENRY KIMPTON, 82 HIGH HOLBORN.

Chemiker-Zeitung,*The Central Organ for scientific and technical Chemists, Manufacturers, Pharmacists, and Engineers.*

Edited, with the co-operation of many well-known Specialists, by

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Zoology, 9 a.m.—Professor Young.

Clinical Medicine, 9 a.m.—Professor M'Call Anderson and Professor Gairdner.

Clinical Surgery, 9 a.m.—Professor George Buchanan and Professor Macleod.

Chemistry, 10 a.m.; and Chemical Laboratory, 10 a.m. to p.m.—Professor Ferguson.

Anatomy: Senior, 11 a.m.; Junior, 2 p.m.; and Practical Anatomy, 9 a.m. to 4 p.m.—Professor Cleland, J. Yule Mackay, M.B., and other Demonstrators.

Practice of Physic, 11 a.m.—Professor Gairdner.

Materia Medica, 12 noon, and Pharmaceutical Laboratory.—Professor Charteris and Dr. Napier.

Institutes of Medicine, 12 noon, and Physiological Laboratory.—Professor M'Kendrick, and J. M'Gregor Robertson, M.A., M.B., the Muirhead Demonstrator.

Surgery, 1 p.m.—Professor Macleod.

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Public Health.—Professor Simpson.

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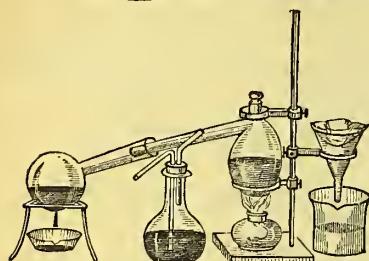
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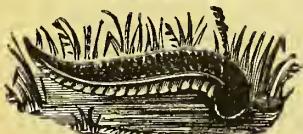
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14	" SECOND " " " "	40	13 14 6	6 18 0
15	" FIRST " " Toilet "	100	31 12 0	15 16 6	7 19 0
16	" GOOD " " "	100	23 14 0	11 17 6	5 19 0
17	" SECOND " " "	100	18 10 0	9 6 0	4 14 0
18	" USEFUL PIECES " " "	100	13 5 0	6 13 0	3 7 0
19	" FIRST QUALITY ... Nursery Sizes ...	200	13 18 0	7 0 0	3 10 6
20	" SECOND " " " "	200	8 15 6	4 8 0	2 4 6
21	SOLID, FIRST " " Toilet "	200	18 10 0	9 6 0	4 14 0
22	" SECOND " " " "	200	12 5 0	6 3 0	3 2 0
23	" FIRST " " Nursery "	200	10 12 0	5 7 0	2 14 0
24	" SECOND " " " "	200	5 5 6	2 13 0	1 7 0
25	BROWN, FINE " Assorted "	200	5 11 6	3 0 0	1 11 0

S. MAW, SON & THOMPSON, LONDON.

TRADE MARKS—BULL AND BULL'S HEAD.

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Prepared from the Recipe of the late Dr. ANDERSON, produces a lovely complexion. It is elegantly perfumed, without sediment, and perfectly harmless. One of the best preparations before the public. Largely advertised and in great request. 4/6 each.

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ASHWORTH'S PATENT METALLIC COMB-BRUSH AND METALLIC-BRISTLE COMB-BRUSH.

IMPORTANT TO SHIPPERS.
These brushes are delightfully cool to the head, producing a most agreeable sensation, and will facilitate the most hairy head without injury. These handles are also in solid pieces, and hence will not fall apart as in the case of brush handles covered with veneer. The latter brush shows a most remarkable development in metallic brush making. It is made of fine tempered steel wires about the thickness of ordinary bristles. This penetrates, smoothes, and fixes the hair. It is, to express the words of a user, "Simply perfection as a hair brush, and must, when known, take the place of the bristle brush for toilet uses." Send for a SAMPLE BY POST AND TRY IT.

Prices of Metallic Comb-Brush, post free.

Ladies' and Gentlemen's Black Japan.....	1/9	2/3	2/9
Gentlemen's Black Japan, Military Style	2/0	2/6	3/0
Dog, Cattle, and Horse Brushes	2/0	2/6	3/0

Prices of Metallic-Bristle Comb-Brush, post free.

Ladies' and Gentlemen's Black Japan.....	2/4	3/0	4/0
Ivory-coated.....	2/8	3/6	4/4
Gentlemen's Black Japan, Military Style	2/8	3/6	4/4

The "Humanitas" Curry Comb Brush, for Horses, Dogs, Cattle, &c.—Priced:

Made of iron wire, covered with white metal—No. 1, 1/0 each; No. 2, 1/6 each.
" fine steel wire, covered with white metal—No. 0, 1, 1/6; No. 2, 2/0 each

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Retail, 1/-, 1/9, and 3/6; Wholesale, 9/-, 15/-, and 30/- per doz.

This much-admired Perfume (prepared by the Widow of the late Joseph Okell), may be obtained from the leading Patent Medicine Houses, Wholesale Druggists, and Druggists' Sundry Dealers.

Applications for WHOLESALE Agencies to be made to the Sole CONSIGNEE, THOMAS WEST, Chemist, 61 Chester Road, Stretford, Lancashire.

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**WHITAKER & GROSSMITH'S
PURE WHITE GLYCERINE SOAP.***Richly Perfumed, and guaranteed to contain the necessary quantity of GLYCERINE for effectually imparting to the SKIN the softening and healing properties for which it is so justly famed. 1s. 6d. Boxes of Three Tablets, 12s. per Dozen Boxes.***SELECT TOILET PREPARATIONS,** extensively increasing in demand, which attests their excellent quality.

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Sandringham " 1/6 " 12/-	Ess Bouquet ...	Brillantine ... 8/-, 12/- & 20/-
Eucalyptus Oil " 1/6 " 12	Frangipanni ...	Anglo Eau de Cologne ... 8/- & 12/-
Wild Thyme (Thymol) 1/- " 8/-	Pearl of Perfumes ...	Eucalyptus Vinegar ... 12/- & 20/-
Semi-Cut Bars " 1/- Bars of 6 kinds 8/- 6/- Lime Tree Blossoms ...		White Cherry Tooth Paste 8/- & 12/-

Trade Price Lists sent and Orders executed through Wholesale Houses, or direct from the Manufacturers,¹**WHITAKER & GROSSMITH, 22 SILK STREET (REMOVED FROM 120 FORE STREET), LONDON, E.C.****F R I C T I O N .****THE MOST PLEASANT MODE OF APPLYING IT TO SKIN IS BY THE
PANSTREPTON (or All-Pliant) FLESH BRUSH.**

The best Article ever introduced for the purpose.

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ORIENTAL TOOTH PASTE.**

This old-established and increasingly favourite Dentifrice has been Fifty Years before the Public. It is warranted to retain its properties and keep in good condition in any climate.

The original and only genuine is manufactured solely by

**JEWESBURY and BROWN,
CHEMISTS, MANCHESTER,**

and is distinguishable by the Trade Mark, printed in red and green, a facsimile of which is annexed. Particular attention should be paid to this guarantee of genuineness, as numerous imitations are offered.

Sold universally by Chemists and Perfumers, at 1s. 6d. and 2s. 6d.

The Trade and Shippers supplied by the leading houses in London and elsewhere. Bills and Show Cards forwarded on receipt of address card, and directions for enclosure.

INDEX TO ADVERTISEMENTS,

See pages 39-40.

S. MAW, SON & THOMPSON'S Bath Gloves, Rubbers, &c.

	Gloves. (Pairs.)	Straps.	Pads.	Gloves. (Pairs.)	Straps.	Pads.
CALEFACIO OR BADEN, No. 1, soft Brown . . . per doz.	6/4	10 8	6/0	HONEYCOMB, White. per doz.	5/4	10/8 5/6
CALEFACIO OR BADEN, No. 2, hard Brown . . . per doz.	6/4	10/8	6/0	REVERSIBLE, No. 1, one side soft Brown, the other best		
CALEFACIO OR BADEN, No. 3, soft Brown, assorted patterns, per doz.	6/8	11/4	6/0	White Turkish . . . per doz.	7/0	12/0 6/0
CALEFACIO OR BADEN, as- sorted patterns, export quality, per doz.	4/0		(Red labels)	REVERSIBLE, No. 2, one side hard Brown, the other White		
CALEFACIO (the U.S.), Striped soft Brown . . . per doz.	6/8	11/4	6/0	Honeycomb . . . per doz.	7/0	12/0 6/0
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				White Turkish, per doz., single	8/0	— —
TURKISH THIN WHITE GLOVES, per doz. pairs,	4/-			PADS, per doz.	4/-	
Ditto BEST QUALITY			" 5/-	" "	" 5/8	

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WATERPROOF CHECK SPONGE BAGS.

No. 1	2	3	4	5	6	
7×6	8×7	9×8	10×9	11×10	12×11	inches.
6/0	7/0	9/0	11/0	12/6	16/0	per dozen.

For other descriptions, see Quarterly Price Current, page 99.

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WITH BALL CLASP FASTENINGS, NICKEL-PLATED.

No.	2	3	4	5	6	
CHECK...	8×7	9×8	10×9	11×10	12×11	inches.
PAISLEY ...	16/0	18/0	20/0	26/0	28/0	per dozen.

7 TO 12 ALDERSGATE ST., LONDON.



THE BRIGHTON
SPONGE BAG.

SPONGES.

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SPONGE IMPORTERS & MERCHANTS,

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ESTABLISHED 1850.

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OR WEIGHT, SANDLESS OR IN SAND, OR ON STRINGS,
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BEG TO DRAW THE ATTENTION OF CHEMISTS, DRUGGISTS, AND PERFUMERY DEALERS TO
THEIR FINE PERFUMES AND FANCY SOAPS, FOR THE EXCELLENT QUALITY OF WHICH

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Concentrated Essences of Great Fragrance and Strength:—

Tanglewood,	White Rose,	Frangipani,
Crown Bouquet,	Jockey Club,	Opoponax,
Mathiola,	Ess Bouquet,	Ylang Ylang,
Stephanotis,	Wood Violet,	Isle of Wight Bouquet.

18/-, 20/-, 28/-, 48/-, and 84/- per doz.

SUPPLIED IN BOND FOR EXPORT AT GREATLY REDUCED PRICES.

THE CROWN SOAPS are prepared with great care from the purest materials, delicately perfumed, and very lasting.

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PURE COAL TAR SOAP.—Each tablet enveloped in tin-foil. 27s. per gross. The well-known disinfecting properties of this Soap have caused it to be in universal demand. Its regular use, especially in warm climates, quickly allays all irritation of the Skin, whilst its agreeable odour induces a feeling of freshness and comfort not attainable by any other means.

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OPALINE FACE POWDER. 3/6 and 7/- per dozen packets; 15/- per dozen boxes.

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THE SANITARY (REGISTERED) ROSE POWDER,

*"The Perfection of
Nursery Powders."*

A SOLUBLE Antiseptic Dusting Powder for TOILET and CHILDREN'S USE.

RECOMMENDED BY EMINENT MEDICAL AUTHORITIES.

Useful in cases of irritability or chafing of the skin, for unpleasant perspiration, &c. Suitable for application to the tenderest skins of Infants and Invalids, and superior to the ordinary Toilet Powders for Ladies' use.

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"NURSERY"**HAIR
LOTION.**

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FOR STOPPING ALL BLEEDINGS.

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TINCTURE**

FOR THE TEETH AND GUMS.

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FOR THE CURE OF TOOTHACHE. 1/-

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JOHANN MARIA FARINA,
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Original Manufacturer of this Valuable Perfume,

IS KNOWN THROUGHOUT THE WORLD AS

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In 2 oz. Bottles.

In reputed $\frac{1}{2}$ -Pint, Wickered.

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In reputed Pint, Wickered.

In 6 oz. Bottles.

In reputed Quart, Wickered.

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In 4 oz. Bottles, Wickered.

JOHANN MARIA FARINA,
JULICH'S PLATZ No. 4,
COLOGNE - ON - THE - RHINE.

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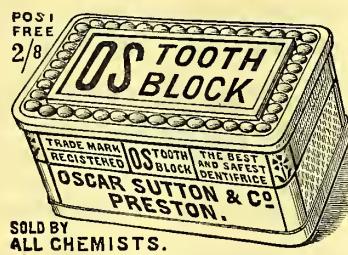
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ALL CHEMISTS.**BEST & SAFEST DENTIFRICE**SOLD BY ALL CHEMISTS
AND PERFUMERS, IN
ELEGANT CRYSTAL
TOILET CASKET

PRICE 2/6.

ALSO IN PATENT
METALLIC BOX

PRICE 1/-



SAMPLE POST FREE

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NEW
White Stopping.
PRICE, 5s. 6d.

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"BRIGHTON GLYCERINE CREAM."

WHOLESALE FROM

Messrs. Barclay, E. Cleaver, Edwards, Newbery, Sanger, Sutton, &c.

IMMENSE SALE.

WOODS' ARECA NUT

TOOTH PASTE.

Price, 6d. and 1/- per Pot.

Sold by all Wholesale Houses.

EAU DE COLOGNE

OF THE MOST ANCIENT DISTILLER,

JOHANN MARIA FARINA,

Opposite the Julichs Place, COLOGNE.

ESTABLISHED A.D. 1709.

PRIZE MEDALS:—LONDON, 1851 AND 1862; OPORTO, 1865; PARIS, 1867; VIENNA, 1873.

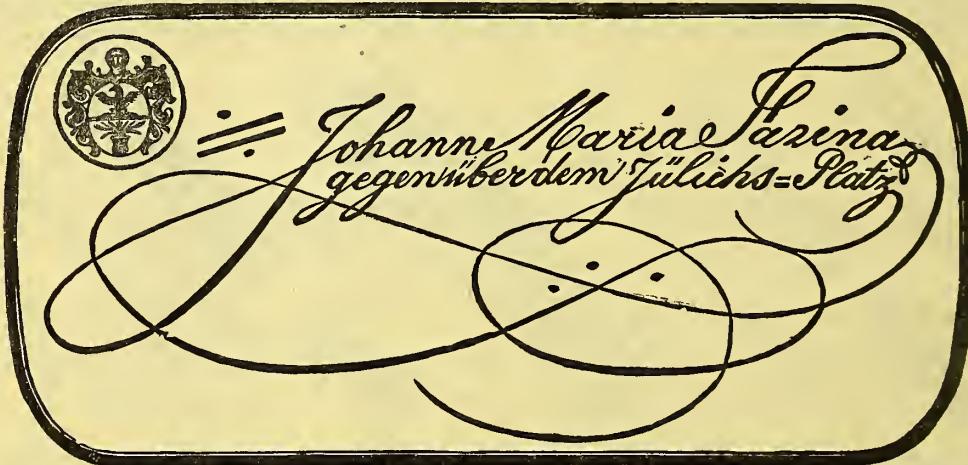
By appointment, Sole Purveyor to Her Most Gracious
Majesty Victoria, Queen of Great Britain & Ireland;
Their Royal Highnesses the Prince and Princess
of Wales; William, King of Prussia;



Albert II., King of Saxony; Alexander II., Emperor
of Russia; Francis Joseph, Emperor of Austria;
Lewis, King of Portugal; H.R.H. Frederick
William, Crown Prince of Prussia.

In consequence of increasing inquiries from the Colonies for my Eau de Cologne, the only genuine, I beg to submit my Price Current.

At the same time I beg to call special attention to the following facsimile of my Trade Mark, for the protection of which I have instituted thirteen suits in the High Court of Chancery, all of which have been decided in my favour.



All similar Labels being more or less imitations of the same, I shall proceed as before against all persons selling or exposing for sale any such imitations.

I only prepare one quality of Eau de Cologne. This quality never varies in the slightest degree, and there has not been the smallest change in the manufacture since the year 1709, when it was invented by my ancestor.

Orders equal to at least 12 dozen short bottles will be promptly executed at 12s. 6d. per dozen, against my bill drawn at three months from the date of invoice, delivered free on board the export ship, at Rotterdam, Antwerp, Hamburg, or Bremen, no charge being made for the case and packing, but insurance charged extra. $\frac{7}{12}$ per cent. discount is allowed for orders equal to at least 100 dozen, but on no smaller quantities.

I may add that, as I do not draw on the Colonies, all Orders must be accompanied by a credit on some London House, or permission to draw on same at three months.

The Goods can also be shipped in transit through London at a very small additional expense, full particulars of which may be obtained of my Sole Agents for Great Britain and Ireland:—

MESSRS. J. & R. McCACKEN,
No. 38 Queen Street, Cannon Street, London, E.O.

The following are the sizes of my bottles:—

No. 1.	Long Green Flasks	...	...	...	...	12 bottles	
"	Short White Bottles	...	...	...	...	12	"
"	Double ditto	...	...	...	...	6	
"	4. Wickered Bottles (small)	...	...	...	...	8	"
"	5. ditto (medium)	...	...	...	...	4	"
"	6. ditto (large)	...	...	...	...	2	"

} to one dozen.

JOHANN MARIA FARINA,

OPPOSITE THE JÜLICH'S PLACE.

SPONGE.

LYNCH & CO.

Wish to draw special attention to their system of selling SPONGE *by the piece*, and also beg to announce that they will be pleased to send out Cases of HONEYCOMB or TURKEY, assorted as their Customers may wish, on approbation.

033.	Honeycomb	...	...	per piece, from	-/3 to 10/-
033m.	Honeycomb, for stable use			" "	-/6 to 2/-
034.	Turkey, Carriage	...	...	" "	2/- to 6/-
034a.	Bath Cups	...	...	" "	6/- to 21/-
034b.	Nursery Cups	...	...	" "	-/6 to 1/6
034c.	Toilet Cups	...	...	" "	2/- to 4/6
034d.	Solid	...	...	" "	-/3 to 4/-

Assorted Boxes of Honeycomb, Nursery, Toilet, or Solid Turkey, containing 12, 25, or 50 pieces, from 25/- to £5 per box.

Assorted Cases of Honeycomb or Turkey, containing 50, 75, or 100 pieces, at prices according to size and quality of Sponge required.

Honeycomb	...	...	...	by the lb., from 5/- to 14/-
Turkey Cups	...	...	...	31/6 to 60/-
Turkey Nursery Cups	...	...	"	19/- to 30/-
Turkey Toilet Cups	...	...	"	30/- to 60/-
Turkey Eye Cups	...	...	"	12/- to 18/-
Turkey Solids	...	...	"	12/- to 20/-
Slate	...	...	"	3/- to 6/-
Carriage	...	...	"	14/- to 30/-

SUBJECT TO USUAL DISCOUNT.

For more general quotations, see body of LYNCH & CO.'S CATALOGUE, Part I, pp. 80, 81.

LYNCH & CO.

Have a large Stock of Honeycomb and Turkey Sponges, and respectfully invite an inspection of same.

HOW-ROOMS—192 ALDERSGATE STREET, LONDON, E.C.

AUSTRALIAN BRANCH—15 VAUGHAN'S CHAMBERS, 48 QUEEN ST., MELBOURNE.

MARKING INK (Sine Silver),

Intensely Black, Permanent, and requires no Heating.

IN BULK FOR CHEMISTS' OWN PUTTING UP.

In 4-oz., 8-oz., and 12-oz. Bottles, at 4/-, 7/-, and 10/- respectively.
Sent free to any part of the United Kingdom on receipt of remittance
made payable to

J. BUNKER, Chemist, Hackney, London, E.

CORN & BUNION EXTERMINATOR.

REGISTERED.

This Instrument effects a painless cure for Corns, Bunions, Warts,
Hard and Scaly Formations, &c.Wholesale terms upon application. Price, 1/- each; post free, 13 stamps.
Testimonials can be seen, or operations performed in peculiar and difficult cases, at C. & J. P. GARDNER'S, Chiropodists, Inventors, and Manufacturers, Kendal. Also Makers of Metallic Ferret Muzzles.Sample sent, post free, nine stamps. Agents wanted abroad.
Wholesale Agents who stock above—MESSRS. BAROLAY & SON, MAW SON & THOMPSON, London; GOODALL, BACKHOUSE & CO., Leeds.

IMPORTANT TO CHEMISTS
THE DORIC CURES ARE XIX CENTURY MARY

1. DORIC. Eye lotion, guaranteed to quickly cure red, sore eyes, and lids.
NUMBERS OF TESTIMONIALS.

2. DORIC. Skin softener, cures Corn Warts, Chilblains, Chaps and Rough Skin as if by magic. It is sweet smelling, harmless and can be used on the delicate skin with beneficial results.

3. DORIC. Cure for Neuralgia, Tic, Rheumatic pains &c.

4. DORIC. Embrocation for cuts and Sprains, all 1½ and 2/- Retail.

EXTRAORDINARY ADVANTAGES OFFERED TO THE TRADE

WRITE FOR PARTICULARS TO
DORIC CURATIVE CO. 20 HIGH HOLBORN LONDON

TRADE MARK.
HIPPOCRATES THE DORIAN
THE FATHER OF MEDICINE

PHOENIX

ESTABLISHED A.D. 1815

GENUINE INDELIBLE



THE LEADING &
STANDARD ARTICLE
PREPARED ONLY BY THE WIDOW OF THE LATE
JOHN MURPHY
CHEMIST AT THE ORIGINAL ESTABLISHMENT
11, NILE STREET, EAST ROAD, HOXTON N.

MARKING INK

NO OTHER ADDRESS — BEWARE OF WORTHLESS IMITATIONS.

MARION & CO.,
22 & 23 SOHO SQUARE, LONDON, W.,
THE BEST WHOLESALE HOUSE FOR

PHOTOGRAPHIC MATERIAL.

MANUFACTURERS OF
FRENCH MOUNTS OF ALL KINDS.
(Factory at Courbevoie, Paris.)

BRITANNIA DRY PLATES.

From their Cheapness and Excellence are in universal use.

MARION'S ALBUMENISED PAPERS.**PHOTOGRAPHIC CHEMICALS,**

As Cheap as any House.

COMPLETE OUTFIT FOR AMATEURS
From 50/- to £50.

MARION'S LENSES,

For Portraits, Views, and Instantaneous Photography.

CAMERAS AND PHOTOGRAPHIC CABINET WORK.**BACKGROUND AND ACCESSORIES**

For the Studio.

WORKS AT SOUTHGATE FOR ENLARGING AND PRINTING.

JUST PUBLISHED.
MARION'S PRACTICAL GUIDE TO PHOTOGRAPHY, 2/6.
THE MOST PRACTICAL AND THOROUGH BOOK ON THE SUBJECT.

SAMPLES AND LIST OF PRICES FREE ON APPLICATION.

MARION & CO., 22 & 23 SOHO SQUARE, LONDON, W.

SPECIAL NOTICE

TO SHIPPERS, WHOLESALE DEALERS, AND THE TRADE.

SPECIALITIES WORTH ATTENTION.

THE ONLY
BROWN WINDSOR
USED IN
HER MAJESTY'S
PALACES



SOLD IN BOXES CONTAINING SIX SMALL TABLETS OR
THREE LARGE, 1/6 each; 12s. per Dozen Boxes.

DUCHESS MARIE BOUQUET

ADELINA PATTI'S FAVORITE PERFUME.

2s. 6d., 3s. 6d., 5s. and 10s. 6d. per Bottle; 20s., 28s., 40s., 80s. per Dozen.

London,
26 Grosvenor Road S.W.
July 4 1882
Dear Sirs,
I have much pleasure in certifying
that your perfume known as 'Duchess Marie Bouquet'
was supplied
to Her Majesty and the Royal Family
as the one selected for the use of
Her Majesty and the Royal Family.
Its fragrant and delicate perfume
combined with its valuable
tonic qualities have ensured
the approbation and constant use
of Her Majesty and her Court.
John Beddoe,
Member of the Pharmaceutical Society
Chemist to the Queen.

Draycott Lodge,
King's Road,
Fulham, S.W. June 15, 1882
Gentlemen,
I beg to thank you for the sample
bottle of Duchesse Marie. I shall get much
pleased if you will send me a case of
a dozen bottles, as I like it very much.
Yours faithfully,
Wm. Sharp Bros.,
12 Southampton Row,
High Holborn, London.



PRICE LIST ON APPLICATION.

SHARP BROS., 12 SOUTHAMPTON ROW, LONDON, W.C.

GEORGE TREBLE & SON,

DRUGGISTS' SHOP FITTERS BY CONTRACT.

If New Fittings are required or Alterations become necessary, apply to GEO. TREBLE & SON, whose Travellers will call to take instructions and measurements in any part of the kingdom, and will prepare Suitable Designs and Estimates Free.

Our New Catalogue, containing 300 Designs, forwarded on receipt of Trade Card.

BRIDGE WHARF,

WHITMORE ROAD,

HOXTON, LONDON, N.

Agents—S. MAW, SON & THOMPSON, 7 to 12 ALDERSGATE ST., CITY.

NOTICE ! 66 PENTONVILLE ROAD, N. SOLE ADDRESS.

LEMAITRE & CO.

(ESTABLISHED 1830),

£50

COMPLETE FITTINGS

FOR

CHEMISTS' SHOPS.

MEDICAL AND GENERAL
SHOP FITTERS,

WRITERS, DECORATORS, &c.

SEND FOR OUR ILLUSTRATED LISTS.

Best Manufacture and Seasoned Wood.

£100

COMPLETE FITTINGS

FOR

CHEMISTS' SHOPS.

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Mr. BOOT, Chemist, Goose Gate, Nottingham.

Mr. ROBINSON, 334 Alfreton Road, Nottingham.

Mr. TRICK, Green Lanes, Stoke Newington; ditto, Firm Park, Stroud Green, Finsbury Park.

Mr. TAYLOR, Leith Terrace, Kilburn, London.

WOOD & LAYNG, Finsbury Pavement, London.

POTTER & CLARKE, Holborn Viaduct.

SAVAGE & ADAMS, St. James's Street, Brighton.

Mr. STEVENS, Chemist, St. James's Street, Walthamstow.

WILKINSON & SIMPSON, Newcastle Street, Newcastle-on-Tyne. A handsome Shop.

Mr. TULLY, 185 St. George's Road, West Hill, Hastings.

J. & W. BYGRAVE, SHOP FITTERS

AND

SHOW CASE MANUFACTURERS,
12 Curzon Street, Wenlock Street,
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No charge for packing or fixing, and all goods sent carriage paid. All measurements of shops will be taken free of charge within 200 miles of London.

NOTICE.—The Best and Cheapest Manufacturers in the Trade.

NOTICE FOR REFERENCES.

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Mr. HORNE, Douglas, Isle of Man.

Mr. SAUNDERS, Orford Road, Walthamstow.

Mr. RUTTER, Annandale Road, Turnham Green.

Mr. MITCHELL, Cottenham Road, Holloway.

Mr. JOHNSTONE, Byker, Newcastle-on-Tyne.

Mr. WHITE, 1 New Road, Commercial Road.

Mr. SLACK, 215 Clarendon Road, Notting Hill.

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Mr. BAKER, 8 Stockbridge Terrace, Grosvenor Gardens.

Chemists and Druggists' Shops fitted in country same price as in town. Twenty per cent. cheaper than any in the Trade.

SHOP-FITTINGS.

ESTABLISHED 1830.

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A few Minutes' Ride by Omnibus from the Bank.

MEDICAL AND GENERAL SHOP FITTER.

SHOPS FITTED BY S. H., and to whom references are kindly permitted:—

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&c. &c. &c.

Messrs. Leath & Ross, St. Paul's Churchyard London.

Harvey & Reynolds, Leeds.

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Cabinet Fitter to the Pharmaceutical Society of Great Britain. Manufacturer of every description of Air-tight Glass Showcases for Chemists, Jewellers, &c. Medical Labelling, &c.

Plans and Estimates for Entire Fittings and Alterations supplied.

ARTISTIC SHOP FITTINGS FOR HOME AND EXPORT.

Our NEW CATALOGUE sent free on receipt of Business Card.

JOHN CURTIS & SON, WADE STREET and WADE LANE, LEEDS.

ESTABLISHED 1852.

FIRE!

THE ART JOINERY WORKS.

BOWLING & GOVIER, Medical Shop Fitters, GUN STREET, BRUSHFIELD ST., BISHOPSGATE.

NOTICE OF REMOVAL.—In consequence of the Fire which occurred in adjoining premises having completely burned our Factory, we have removed to temporary premises, No. 10 Gun Street, Bishopsgate, E.C., during the rebuilding, where all communications should now be addressed.

CONTRACTS ON HAND.—Our Customers whose Contracts we have now on hand are assured that their work is being pushed forward in the most satisfactory manner, and every care and attention shall be given to the manufacturing, so that the quality and style for which we have gained our name shall not suffer in consequence.

BOWLING & GOVIER take this opportunity of thanking their many friends for not only the kind support they have received from them, but for the recommendation and praise of their work at all times so freely given—and which they trust has been well deserved—and now ask for their kind continuance of same.

Terms as before. Best work at the lowest prices for cash. Send for Plans and Estimates.

To Chemists Fitting-up, Refitting, or Making Alterations.

**R. TOMLINSON, Medical Shop Fitter,
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Has supplied SHOP FITTINGS, either whole or in part, to the following Chemists:—

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TRURO : Mr. W. Bitcher.
UTTOXETER : Mr. A. Parker and many others in the foregoing and other towns.

Lists and Estimates Free. — Workmen sent to all parts of the Country.

W. S. YATES,

Chemists' Shop Fitter, Shop Front Builder, and Glass Show Case Maker.

DENTIST CASES.

Plans and Estimates supplied for Work in any part of the Kingdom.

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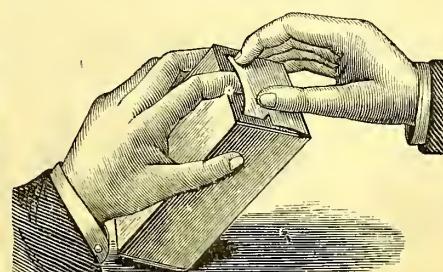
Shop Fittings, Labelling, and Glass Writing
OF EVERY DESCRIPTION.

SHOW CASES, &c.,
DESIGNERS & MANUFACTURERS,

EVANS, SONS & CO., 56 Hanover Street, LIVERPOOL.

Druggists' Sundries Department.

AUG. BREHMER'S PATENT FOLDING CARDBOARD BOXES,



Specialy suitable and highly recommended
for packing up Proprietary Goods, Cereals,
Foods, Patent Medicines, &c.

ESTIMATES AND SAMPLES FREE ON APPLICATION.
Steam Factory—8 & 4 Moor Lane, Fore Street, London, E.C.

Supervising Paper Wrappers in neatness
of appearance and strength, and therefore
affording great protection to bottles, &c.



SAVARS.



PARTICULAR ATTENTION IS CALLED TO THE

DETAILED LIST OF DRUGGISTS' SUNDRIES, PROPRIETARY ARTICLES, PATENT MEDICINES, &c.,

Issued by us on July 15, 1884, consisting of 94 pages, fully illustrated.

SAVARS ARTICLES ARE OF GUARANTEED QUALITY,
AND ARE
SUPPLIED TO THE REGISTERED CHEMISTS ONLY.

• A LIST SENT ON RECEIPT OF BUSINESS CARD AND REFERENCE.

EVANS, SONS & CO.,
56 Hanover Street,
LIVERPOOL.

MANCHESTER OFFICE AND SHOWROOM—Exchange Buildings, Cromford Court, Market Street.
BIRMINGHAM OFFICE AND SHOWROOM—Barwick Street, off Livery Street.

H. SUGDEN EVANS & CO., Montreal, Canada.

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60 Bartholomew Close,
LONDON.



SAVARS.



BOURNE, JOHNSON & LATIMER,

(SUCCESSORS TO BOURNE & TAYLOR),

WHOLESALE & EXPORT DRUGGISTS' SUNDRIESMEN,

34 & 35 Castle Street, Holborn, London, E.C.

NEW GOODS.

Baby Pacifiers, 4/- per doz.	Filled Screw Cap Watch Bottle, 4/- per doz.	Ye Feeding Bottle of Ye Olden Time, 8/- per doz.	Oval Transparent Soap Tablet, 36/- per gross. Special price for 2 gross and upwards.	Continuous Throat Sprays, 40/- and 38/- per doz.	Solid Vulcanite Teething Pad, 4/- per doz.	Cut Stoppered /6 & 1/- Perfume, 4/- & 8/- per doz. Very saleable line.	Lustrous Wire Sponge Racks, 3/-, 4/-, and 7/- per doz.	Wood Bath Thermometer, 17 in. long, 18/- per doz. With Glass Scale enclosed.	Glass Filters, Charcoal Block. Pint 1/-, 10/- Quart 2/-, 3-pint 3/-, 2-quart 4/-, 6/-.	Cure for Hard Corns (½-dozen on card), 2/- per dozen.	Baby Toilet Box, 18/- per doz. Containing requisites for the baby toilet.
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SPECIAL ANNOUNCEMENT.

We beg to direct the attention of our Customers, and Chemists generally, to the **SUPPLEMENTARY PRICE LIST** which has been issued and posted this month; it contains several important reductions in prices, as well as a number of very saleable Novelties recently added to stock. The following, amongst other Specialities, have had a steady sale, and are worth noticing:—

DRESSING COMBS	INHALERS (Universal)	S PONGES (by the piece)	C URLING PAPERS	P ET F E E D I N G BOTTLES	E YE DOUCHES	R ESPIRATORS	C OLD CREAM POT (Flat series)	E AR SYRINGES	N URSEY REQUIRE-SITES	T OOTH BRUSHES	J AM POT COVERS
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SALEABLE & SEASONABLE GOODS.

The "Pet" Feeding Bottle <i>Is made in a variety of styles, the most steable of which are the</i>	No. 6. Bent Neck, with Wood Top Cork, White Fittings .. 3/-	No. 7. Bent Neck, with Wood Neck, with Wood Top Cork, Black Fittings .. 3/-	No. 10. Bent Neck, Screw Glass Stopper, White Fittings .. 4/-	No. 11. Bent Neck, Screw Glass Stopper, Black, Fittings .. 4/-	No. 14. Bent Neck, Shilling Size, in Handmade Box, For Qua- cks .. 7/-	No. 17. Bent Neck, Screw Metal Caps, "White Flint" Black Fittings .. 8/-	No. 20. Bent Neck, Screw Metal Gilt Caps, "White Flint", Black Fittings .. 8/-	No. 21. Bent Neck, China Caps, Gilt Monks, "White Flint", Black Fittings .. 12/-	Bathing Caps, Drab, 9/-; Check, 12/-; Oiled Silk, 16/-.	Sponge Bags, made in new cloth and variety of shapes. <i>See Price Catalogue.</i>
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Orders by Post executed and forwarded the same day as received. Ten per cent. discount for prompt cash. Extended Price Catalogue sent post free on receipt of business card. Sample Orders solicited. Satisfaction guaranteed.

NOW READY.

SANGER & SONS'

REVISED PRICE CURRENT

OF
PATENT MEDICINES,
PERFUMERY,
LOZENGES.

OF
DRUGGISTS' SUNDRIES,
MINERAL WATERS,
SPONGES, &c.



FREE ON RECEIPT OF BUSINESS CARD.

AGENCIES OF ALL KINDS UNDERTAKEN ON FAVOURABLE TERMS.

MESSRS. SANGER & SONS beg to call the attention of the Trade to the fact that their Prices, with the best Discounts off, come out in many cases lower than the published New Lists of other houses. A few examples of Prices are given below.

Articles charged	4s. Od.	come out net	3s. 5d.; usual net prices	3s. 6d.
"	6s. Od.	"	5s. 1½d.	"
"	9s. Od.	"	7s. 8½d.	"
"	10s. 6d.	"	8s. 11½d.	"
"	25s. Od.	"	21s. 4½d.	"
"	28s. Od.	"	23s. 11½d.	"

ENEMAS—HIGGINSONS.

		Subject to Discount.	Nett.
Large size, Unvarnished Brown Rubber, fitted with Bone Rectum Pipe, in cardboard box (<i>complete dozen, 28/-</i>)	..	per doz.	£1 4 0 20/6
Ditto ditto in cedar box, extra per dozen, 1/-.			
Ditto ditto with Vagina Pipe and Shield, extra per dozen, 4/-.			
Small Size, Green Rubber, disconnecting, with Bone Rectum and Elastic Vagina Pipes to plug, Black Shield, in slide cedar box (<i>complete dozen, 28/-</i>) ..	..	1 10 0	25/7½
Large size, with Bone Rectum and Elastic Vagina Pipe, both to screw on and off, Black Shield, in slide cedar boxes (<i>complete dozen, 35/-</i>) ..	..	1 16 0	31/2½

Special attention is called to the advantages of above, as, being made to screw on and off, are much easier to clean. Further Sizes and Prices in Catalogue.

Purchasers of Druggists' Sundries, Smelling Bottles, Hair Brushes, Combs, Sponges, Thermometers, Filters, and Boxes of all descriptions should pay a visit to our Showroom before purchasing elsewhere, in order to compare our prices and quality against other houses.

J. SANGER & SONS, 489 OXFORD STREET, LONDON, W.

THE SPECIAL ATTENTION OF THE TRADE
IS CALLED TO

BENZINE COLLAS,

Which is acknowledged on all hands to be the most reliable Preparation for removing Grease, Oil, Tar, Wax, or Paint from every description of Wearing Apparel or Household Stuffs. It neither injures the colour or texture, nor leaves any odour or stain. It is neatly got up, and is a most saleable article. Observe the word "COLLAS" on label and cap.

1,000 Handbills, with Name and Address,
will be printed for any Chemist who gives an order for

£1 WORTH of BENZINE COLLAS,

At the following prices, viz.:—

6d. Size	4s. per dozen, subject to Discount.
1s. Size	8s. " "
1s. 6d. Size	13s. " "

Special Quotations to Shippers and large Buyers on application to

J. SANGER & SONS,
489 OXFORD ST., LONDON, W.

**KEARSLEY'S WIDOW WELCH'S
FEMALE PILLS.**

These are universally acknowledged to be the Genuine, and Druggists may safely recommend them.

CAUTION !

The Proprietors of Kearsley's Original Widow Welch's Female Pills find it incumbent on them to caution the purchasers of these Pills against various imitations by parties who have no knowledge of their peculiar preparation, the Original Recipe having been sold to the late G. Kearsley, of Fleet Street, whose Widow found it necessary to make an Affidavit, for the protection of her property, in the year 1798. The Genuine Recipe for **Widow Welch's Female Pills** has been prepared by them for 97 Years! Chemists are particularly requested to remark that, as a testimony of authenticity, each bill of directions contains an Affidavit, and bears the signature of "C. KEARSLEY," in writing, also engraved on the Government Stamp, and each box is wrapped in WHITE paper.

1,000 Handbills, with Name, and 2 Tin Showcards,
Supplied with all Orders for One Dozen (13) Boxes,

PRICE 27s. PER DOZEN, subject to usual Discount.

*Special Quotations to Shippers and for large quantities,
on application to*

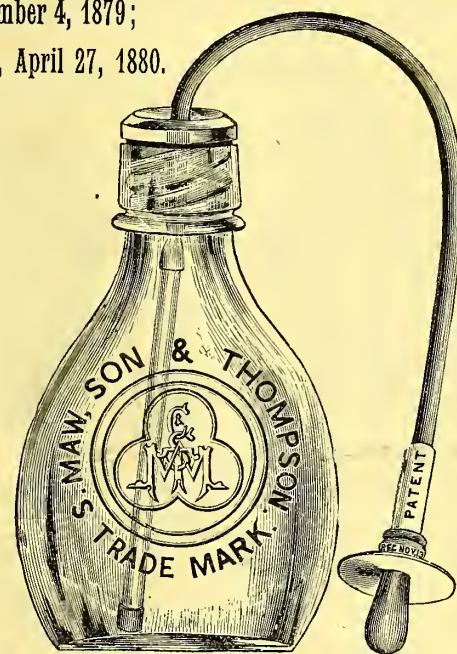
J. SANGER & SONS,
489 OXFORD ST., LONDON, W.

S. MAW, SON & THOMPSON'S FEEDING BOTTLES.

Patented in England, December 4, 1879;
Patented in the United States, April 27, 1880.



THE ALEXANDRA.
(Earthenware Cap.)



THE EXPORT.
(Glass Screw Stopper.)

		White Fittings.			Black Fittings.		
Alexandra, Earthenware Caps.....	per doz.	—	7/6	11/-	—	8/6	12/-
Alexandra, Earthenware Screw Stoppers	„	—	—	11/-	—	—	12/-
Alexandra, Glass Screw Stoppers	„	4/-	7/6	11/-	4/9	8/6	12/-
Export, China or Wood Top Corks	„	3/6	—	—	4/3	—	—
Export, 2nd Quality, Wood Top Corks ...	„	2/9	—	—	3/6	—	—
Export, Earthenware Caps	„	—	7/3	—	—	8/3	—
Export, Glass Screw Stoppers	„	4/-	7/6	—	4/9	8/6	—

FOR FURTHER PARTICULARS SEE QUARTERLY PRICE CURRENT, PAGES 69 AND 70.

SPECIAL QUOTATIONS TO WHOLESALE BUYERS.

S. MAW, SON & THOMPSON, LONDON.

THOMPSON MILLARD'S FEEDING BOTTLES.



THE "MATER."—Screw Glass Stopper.



THE "MATER."—Tin Screw Cap.



THE "MATER."—Porcelain Cap, Gold Lines

No. in Catalogue.			White Fittings.	Black Fittings.
			Per doz.	Per doz.
531, 532	The "MATER,"	green glass, bent neck, wood top corks, in 1 doz. boxes	3, 6	4/-
533, 534	"	" screw glass stopper, each in box	4/3	4/9
538, 539	" white glass	" earthenware caps, each in box	4/-	4/6
543, 544	"	" screw glass stopper, each in box	7/6	8/-
548, 549	"	" extra tube and teat	7/6	8/-
558, 559	"	" tin screw caps	10/-	11/-
552A, 552B	"	" very superior fittings	8/-	9/-
562A, 562B	"	" porcelain caps, gold lines	10/-	11/-
553, 554	The "IMPERIAL,"	suitable for export, green glass, straight, wood top corks, in 1 doz. boxes	10/-	11/-
563, 564	"	" metal screw caps, in 1 doz. boxes	3, 3	3/9
565, 566	"	" white glass, straight, earthenware caps, each in box	4/-	4/9
570, 571	"	" pure tin caps, each in box	4, 3	4/9
575, 576	"	" earthenware caps, each in box	7/1	7/6
580, 581	The "BRISTOL,"	green glass, bent neck, wood top corks, in 1 doz. boxes	7/6	8/-
584A, 584B	" white "	" earthenware caps, each in box	3/-	3/6
584C	584C is one of the best lines ever introduced is put up in handsome box, with neat label.			



THE "IMPERIAL."—Tin Screw Cap.

THOMPSON, MILLARD & CO.,

LIMITED

CURTAIN ROAD,

LONDON, E.C.



THE "BRISTOL."—Earthenware Cap.

NEWBERY'S SIXPENNY "GLOVE" SMELLING SALTS,

Watch Shape, with Screw Metal Cap. Send for a Sample Dozen.

EUCALYPTOL FOR FLIES,

In Bottles to Retail at One Shilling each.

CHOLERA CHARMS

(1d. Lockets), Three Dozen in a Box.

1 KING EDWARD STREET, LONDON, E.C.

Established 1746.

CALCUTTA EXHIBITION, TWO GOLD MEDALS AWARDED TO

ESTABLISHED
1870.

LORIMER & CO.,

ESTABLISHED
1870.

HARGRAVE PARK ROAD, LONDON, N.

FIRST TIME OF EXHIBITING.

SPECIALTIES:

SYRUP FERRI PHOSPH. CO., PARRISH'S (SPECIAL GOLD MEDAL for this), and all Chemical Syrups, and Liquors for preparing them.

Ferris Quinines Citras and all Sealed Preparations.

Quinine and all Cinchona Salts.

Magnes. Citras Gran. Eff. and all Granular Preparations.

Pepsine and Pepsine Wine.

Dec. Sarsap. Co. Conc. 1-7, Liquor Bismuthi, P.B.

Extract of Malt (Prep. in Vacuo).

Quinine Wine, Quinine and Iron Tonic.

New Essence of Lemon, Orange, and all Essential Oils
NEW SEASON'S NON-FREEZING COD-LIVER OIL
(the finest that has been made for years).

Extra Cream Olive Oil, bulk and bottled.

All Fruit, Soluble, and Artificial Essences.

Flavouring Essences and Fruit Syrups.

Samples and Lists are forwarded free on application where we have accounts open, or to any Wholesale Buyers.

FOREIGN INDENTS RECEIVE OUR SPECIAL ATTENTION.

SCHIEFFELIN'S

Are made of the best materials; perfectly protected; entirely and quickly soluble; coated while soft; not subjected to the injurious effects of heat in the process of manufacture. The mass is worked to the highest possible degree of uniform intermixture, and subdivided with scrupulous exactness. The coating is an inert,

tasteless, and odourless compound, which is so transparent, colourless, and thin, that the distinctive colour of each pill is revealed through the coat. No sub-coating is used. The solubility of the coating is not impaired by age. All the officinal pills, as well as any others ordered by the Medical Profession, can be furnished in this form. They can be implicitly relied upon in every respect. The coating, while thoroughly protecting the pill, will not be found to in any way interfere with the action of the drug, and those who have found sugar or chalk-coated pills objectionable, owing to the liability of the coating becoming insoluble by age, will find our coating to dissolve as readily after many years as when first prepared. It, moreover, does not form a hard tough shell, as is the case with the ordinary gelatine coating. We claim and believe our Coated Pills to be nearer perfection than any similar goods that have been offered, and guarantee the pills to be as quickly effective as any uncoated pills that can be made.

SOLUBLE

PILLS.

ALLEN & HANBURY'S, Plough Court, Lombard Street, LONDON.

1884. SEASON. 1884.

NEW COD LIVER OIL.

ALLEN & HANBURY'S

Are glad to state that the quality of the New Season's Cod Liver Oil is much better than that of the last two years; the yield also is much larger than that of last year, and prices are in consequence considerably lower. The New Oil is pale in colour and excellent in flavour, and ALLEN & HANBURY'S can guarantee its remaining bright at 32° F.

SAMPLES FORWARDED ON APPLICATION.

Price 10s. 6d. per gallon in Winchesters; 3d. less per gallon for 1 dozen, and 6d. less per gallon for 1 Cask or more.

ALLEN & HANBURY'S EFFERVESCENT SALINE.

This is a finely granulated preparation, which in dissolving produces a sustained sparkling effervescence, and a clear, bright solution. It possesses all the advantages of an agreeable saline, combined with the anti-febrile properties of Chlorate of Potash, of which it contains a considerable percentage. It is, in short, an efficient aperient and febrifuge, and makes an exceedingly pleasant and refreshing beverage.

PRICES. This Saline is supplied IN BULK at 1s. 6d. per pound; 1s. 5d. per pound for 14 pounds; 1s. 4d. per lb. for 112 pounds; or in $\frac{1}{2}$ -pound bottles (to retail at 1s. 6d.) 11s. per doz.

With or without Labels. It is supplied also on the same terms with A. & H.'s own Labels and Wrappers ready for Retail Sale.

SAMPLES FREE ON APPLICATION.

MANUFACTURED BY

**ALLEN & HANBURY'S, Plough Court,
Lombard Street, LONDON.**

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Brathy & Hincliffe				Lerro (Charecol)	Burgoyne
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Howards				Oakey	Guereit
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Murray				Podophyllin & C	
				Keith	

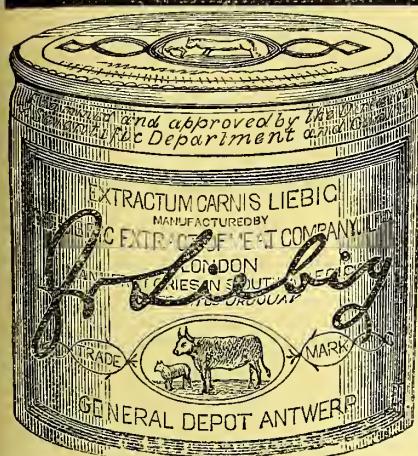
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Harris	Harris

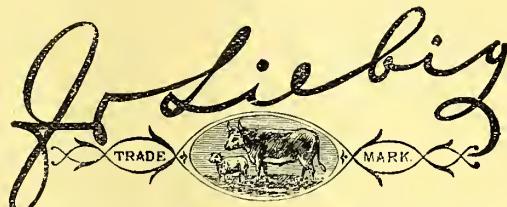
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	2	$4\frac{1}{2} \times 6$	$1\frac{1}{2}$	"		1 0	1 0	1 0	1 0	2 0	1 6
	3	$4\frac{1}{2} \times 7\frac{1}{2}$	2	"		1 6	1 6	1 4	1 4	2 8	2 0
	3	$5\frac{1}{2} \times 7\frac{3}{4}$	3	"		2 3	2 3	2 0	2 0	4 0	3 0
Long Shape	4	$6\frac{1}{2} \times 8\frac{3}{4}$	4	"		3 0	3 0	2 8	2 8	5 4	4 0
	5	$8 \times 9\frac{3}{4}$	6	"		4 6	4 6	4 0	4 0	8 0	6 0
	1	$2\frac{3}{4} \times 4$	1	"		0 8	0 8	0 8	0 8	1 4	1 0
	2	$4\frac{1}{2} \times 6\frac{1}{2}$	2	"		1 6	1 6	1 4	1 4	2 8	2 0
	2	$4\frac{1}{2} \times 8\frac{1}{4}$	3	"		2 3	2 3	2 0	2 0	4 0	3 0
Oval Shape	3	$5\frac{1}{2} \times 9\frac{3}{4}$	4	"		3 0	3 0	2 8	2 8	5 4	4 0
	4	$6\frac{1}{2} \times 11$	6	"		4 6	4 6	4 0	4 0	8 0	6 0
	5	$7\frac{1}{2} \times 14\frac{1}{2}$	8	"		6 8	6 8	6 0	6 0	12 0	8 0
	1	$4\frac{1}{2} \times 6\frac{1}{2}$	2	"		1 6	1 6	1 4	1 4	2 8	2 0
	2	$6\frac{1}{4} \times 8\frac{1}{2}$	4	"		3 0	3 0	2 8	2 8	5 4	4 0
Saddle Shape	3	$7\frac{3}{4} \times 9\frac{3}{4}$	6	"		4 6	4 6	4 0	4 0	8 0	6 0
	1	$6\frac{1}{4} \times 12\frac{1}{4}$	6	"		4 6	4 6	4 0	4 0	8 0	6 0
	2	7×15	8	"		6 8	6 8	6 0	6 0	12 0	8 0
Wrist	3	8×16	12	"		8 8	8 8	8 0	8 0	15 6	12 0
	1	$3 \times 10\frac{1}{4}$	3	"		2 3	2 3	2 0	2 0
Knee	2	$4\frac{1}{4} \times 15$	6	"		4 6	4 6	4 0	4 0
	1	KNEE PLASTER	1	"		1 6	1 6	1 0	1 0

MANUFACTURED BY W. MATHER

MANUFACTURED BY THE MANCHESTER
DYER STREET, HULME, MANCHESTER, ENGLAND.

PRICE LISTS SENT ON APPLICATION.

London Wholesale and Export Agents: Messrs. MACE & HALDANE, 77 Milton Street, London, E.C.

“CHOLERA.”

TYPHOID. DIARRHœA. DIPHTHERIA.

These dreadful diseases are chiefly caused by the consumption of the ordinary water supplied in town and country. Minimise the risk by drinking only water that has been filtered through one of

JUDSON'S
“PERFECT PURITY”

RAPID WATER FILTERS,

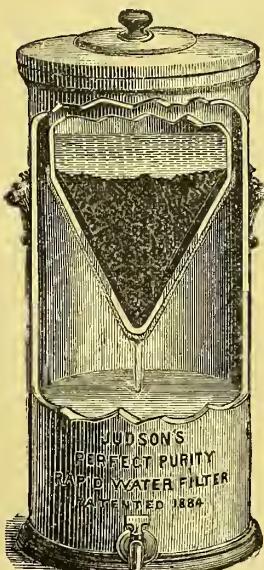
FOR DOMESTIC USE.

PATENTED THROUGHOUT THE WORLD (1884).

This Filter may be cleaned and re-charged with the necessary medium by a child, and is then as good in every respect as a new Filter, at a cost of less than 2d.

No domestic Filter has hitherto been produced so simple in its construction or so perfect in its action. It may be thoroughly cleaned, both inside and outside (every day if necessary) without disturbing the filtering material.

TWELVE LEADING CHARACTERS OF JUDSON'S “P. P.” FILTER.



1. It is simply constructed on scientific principles.	8. It may be used for all varieties of water.
2. It is not liable to get out of order.	9. It can readily be cleansed by any person.
3. It yields water freely and rapidly.	10. It has always given satisfaction.
4. It removes impurities from suspension.	11. It is superior to all other filters.
5. It removes impurities from solution.	12. It is the cheapest as well as the best filter.
6. It removes deleterious gases.	
7. It improves the aeration of the water.	

These Twelve Characters of the Filter are fully treated in Pamphlet, which will be forwarded post free on application.

PRICES OF JUDSON'S “P. P.” FILTERS.

Cream Coloured Stoneware.		
To hold 1 gallon ...	... 15/-	
” 2 ” ...	25/-	
” 3 ” ...	35/-	
White Chinaware. (DECORATED.)		
To hold 1 gallon ...	20/-	
” 2 ” ...	30/-	
” 3 ” ...	40/-	

These prices are for the Filters complete and ready for use, together with sufficient of Judson's “P. P.” Medium to replenish the Filters several times.

VERY LIBERAL
DISCOUNTS
TO
FOREIGN & COLONIAL
BUYERS
FOR CASH.

Important.—These prices are as cheap as is compatible with a good and simple patent Filter. It must be remembered that many of the cheap filters cost a GREAT DEAL every year to renew and keep in order, whereas this filter may be renewed every three months at a cost not exceeding 8d. for the year.

Estimates given for filters on this principle to be fixed to the main supply-pipe to filter 5, 10, 25, 50, or 100 gallons per hour; this is, of course, the safest and most certain system of filtration that can possibly be arranged. By this system all the water used for drinking or culinary purposes is filtered.

Sole Proprietors and Manufacturers—DANIEL JUDSON & SON, Southwark, London.

The “P. P.” Filter may be seen and explained at the above address, or at
“Old London” and Stand 421, East Central Courts, Health Exhibition, London.

EXCHANGE COLUMN.

TERMS.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the Advertisement by the Publisher of THE CHEMIST AND DRUGGIST, and all correspondence relating to it must be addressed to the "Publisher of THE CHEMIST AND DRUGGIST, Colonial Buildings, Cannon Street, London, E.C." the envelope to be endorsed also with the number. The Publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

Dental and Surgical.

Pocket medico-electric machine, new, 15s. 6d., great bargain. 211/26.

Midwifery and other surgical instruments, cheap. "Fideles," 5 Camden Villas, Shirlane Road, London.

Trusses.—Small lot, cleau and well made, right and left side; also three double, slightly soiled; 1s. each, or offers solicited. "Londoniensis," Challicom & Company, 72 Blackstock Road, Seven Sisters' Road, London, N.

100-gallon compressed gas bottle, empty, 1s.; surgery-lathe, only six times used, 35s.; hand spiral-spring drill and two drills, 3s. 6d.; Graham & Wood's articulator, 4s.; cash or exchange. Dens, 58 Tatham Street, Sunderland.

Drugs and Chemicals.

A few more of Syme's msnk at 21s., two bottles 41s., four bottles 80s. Richardson, Chemist, Alford, Lincolnshire.

About 8 lbs. opium Turco, 12s. lb.; catheters and bougies, 4s. 6d. doz., 2 doz.; vanilla, 1 lb., 28s.; croci stig., 40s. lb., 1½ lb., 20s. 21.

Broken and small poppy-heads, fit for infusions or bathing, 20s. cwt., 3s. stono; the others advertised are sold. G. Watson, Chemist, Beccles.

Fifty lbs. gold or copper bronzes, any shade, 7s. 6d. 1b., in ounce packets; cash with order; sample packet 10d. Lockwood, Chemist, 30 The Moor, Sheffield.

Fifty 1-lb. sections comb-honey, some slightly damaged, but all saleable; price 6d. per lb., original wholesale cost was 1s. 1d. per lb.; sample section if required. Kemp, Horn-castle.

Ess. lemon, 4s. 6d. lb.; pulv. rhei opt., 2s. 6d. lb.; pure glycerine, 1260, 8½ d. lb.; fine gum Benjamin, 1s. 10d. lb.; 2 doz. Vals water, 7s. doz.; Briet's 3-pint gasogene, 7s. 6d.; Bismarck brown, 2s. lb.; orange shellac, 9d. lb.; aloes Barb., 1s. 3d. lb.; pure beeswax, 1s. 6d. lb.; new camomile flowers, 6d. lb.; castor oil, E.I., 4½ d. Hicks, Chemist, Hornsey Rise, London, N.

Proprietary Articles.

Myers' royal cattle spice in cwt. and ½ cwt. bags. What offers? 211/13.

Two gross patents in half-gross parcels, assorted, clean and readily saleable. 211/27.

Three doz. 4s. 6d. Henry's American Bitters, 21s. doz., clean; all or part. 211/11.

Two doz. 1s. 1½ d. Jenkins's pills, 6s. 6d. doz.; twenty-five 1s. 1½ d. Bond's female pills, 6s. 6d. doz. 211/21.

Four 2s. 9d. Woodhouse's elixir, six 2s. 3d. Robson's gout mixture, six 2s. 9d. Whelpton's pills, six 2s. 9d. Kayes' Worsell's pills, six 2s. 9d. Morison's pills, thirty-four 1s. 1½ d. Cropper's gout mixture, and about 4 doz. assorted patent medicines; lot for 2s. G. Green, Chemist, Alford, Lincs.

Apparatus.

Indar's rotary pill-machine and piping-press; new, cost 17s.; 12s. Craven, Pontefract.

Handsome large medical electric machine, with improved indicators, 25s. 6d., exceedingly cheap, or offers in patents. 210/28.

A few japanned tins (with loose trays), three sizes (note, letter, and foolscap), suitable for gelatine copying composition. Coates, Duke Street, Edinburgh.

Educational.

Botany.—100 indigenous plants, mounted, classed, and named; only 5s.; carriage paid; invaluable to every student. "Chemist," care of Mr. J. Edwards, Wye.

Set of illegible autograph prescriptions (original), 2s. 6d., as presented to the Pharmaceutical Society of Ireland for their examinations; 30 prescriptions (catch and difficult) given to dispense at Minor during past 12 months, 2s.; 50 questions asked of successful students at last Minor, 1s. 1d.; lot of cheap, almost new, books. Stamp for list. Saunders, Medical Tutor, 6 Rochester Square, N.W. (Note change of residence.)

Literature.

Diary for 1877, never used, what offers? "Devonshire," Broadhempston, Totnes.

Second vol. "Pereira," cheap; old medical works; Journals, bound, from 1854; 1815 "Gazeteer" (Ridder's); Gray's Supplement; Abel & Bloxam's "Chemistry," 25/21.

Wills' "Materia Medica Cabinet," British Pharmacopoeia, 1864, Taylor on "Poisons," Garrod's "Materia Medica," Lindley's "Botany," B., 91 Hammersmith Road, W. Second series of "Pharmaceutical Journal," complete (12 vols.), bound half-calf, in good condition; "Year-books of Pharmacy" for 1871 and 1872; what offers in cash? John Chapman, 7 Pembroke Street, Cork.

Wills' "Botany," 2s.; Pereira's "Selecta," 2s. 6d.; Attifield's "Chemistry," 7s.; Fowne's "Chemistry," 3s. 6d.; Thorowgood's "Materia Medica," 3s.; Griffith's "Prescriptions," 2s. 6d.; Cooley's "Grammar," 2s.; Bentley's "Botany," 7s. 6d.; Jones' "Chemistry," 1s. 6d.; Bentley's "Systematic Botany," 2s.; Roscoe's "Chemistry," 2s.; Ince's "Grammar," 2s.; Holmes' "Note-book," 2s.; Proctor's "Pharmacy," 7s.; Wills' "Pharmacy," 3s. 6d.; carriage paid. J. Emerson, 113, Lynn Street, West Hartlepool.

Soda-water Plant.

Barnett & Foster have some second-hand soda-water machinery of their own for sale.

Apply, 267 Eagle Wharf Road, Hoxton, N.

Second-hand soda-water plant—several in stock.

Address, Brabty & Hincliffe, Sandford Street, Ancoats, Manchester.

Shop Fittings.

Show-bottles, specie-jars, shop-jars (all sizes and colours), lamps, store-bottles, glazed cases. 21 Broadway, Deptford.

Marble mortar and pestle for disposal; inside measurement 11 inches, outside 15; good as new; price 15s. "Mortar," Dyrham, Chippenham.

Special Bargains.—1,200 shop-bottles, new labels; 600 ointment and extract jars, all sizes; 1-gallon store-bottles, specie and show jars, all sizes; carboys; 6 dozen new 2, 3, 4, 5 grain pill-machines; 3 and 5 grain reversible ditto; 120 composition mortars and pestles; 80 composition funnels; 850 graduated glass measures, stamped and unstamped, all sizes; quantity fancy jujube-lozenge jars; quantity shelving, mahogany sliding cupboard doors, &c.; infusion-jars, cold cream pots, engraved acid and oil bottles, tincture - presses; 20, 26 Maw's copper and pewter measures; 17, 18 Maw's root-cutters; retort - stands; and every description of shop-fittings and utensils required by the trade. Lloyd Rayner, 46 De Beauvoir Crescent, Kingsland, N., and 5 The Pavement, Leytonstone, London, E.

Second-hand Fittings (own manufacture).

Counter-case, as Maw's A 4, 42 in. long, 25 in. wide, 23 in. high, no carving, 67.; Spanish mahogany dispensing-screen, plate-glass sashes, tablets, pilasters, trusses, 107 in. long, 23½ in. high, 77. 10s.; mahogany wall-case, three bent plate-glass flaps, solid ends, 73½ long, 21 in. deep, 19½ in. high 67. 10s.; plate-glass counter-case, 43 in. long, 16 in. wide, trays, 21; 30 plate-glass shelves, polished edges, various lengths, 22 to 44 in., various widths, 3½ to 7 in., 2s. each; 2 specie-jars, arms, ornamental tin covers, 21 in. high, and mahogany stands, 37.; 4 specie jars whitened, and 3 plain ornamental tin covers, scroll labels, 23½ in. high, and mahogany plinths, 30s. each; 3 3-gallon carboys; 1 2-gallon flat-front and 3 mahogany stands, 27s. 6d.; 2 3-gallon cylinders, 10s.; 15 1-lb. blue pots and 55 stopped rounds, no labels, 38s.; 2 counter gas pillars, 15s.; 5 gas window-branches, 12s. 6d. Hawke & Son, Wild Court, Great Wild Street, London.

Special Bargains.—4 ft. long nest gold-labelled shop-drawers, design A 79 Maw's, 55s.; 6 ft. long ditto, 75s.; 8 ft. long ditto, 95s.; 10 ft. long ditto, 61s.; 12 ft. long ditto, 77. 10s.; 10 ft. long complete shop-fittings, with gold labels, as A 82 Maw's, 171.; 12 ft. long ditto, 207s.; as A 83; 4 ft. long, 7s.; 6 ft. long, ditto, 107s.; 8 ft. long, ditto, 147s.; as A 84; 10 ft. long, ditto, with glass labels and knobs, 217s.; 12 ft. long, ditto, 257. 10s.; retail and dispensing counters, as A 60 Maw's: 4 ft. long, 40s.; 6 ft. long, 60s.; 8 ft. long, 47s.; 10 ft. long, 57s.; 12 ft. long, 67s.; as A 61: 4 ft. long, 60s.; 6 ft. long, 95s.; 8 ft. long, 67. 6s.; 10 ft. long, 87s.; 12 ft. long, 97. 10s.; 13 ft. long, 107. 5s.; quantity counter-drawers, &c. All these goods are new or equal to new, best make, and delivered carriage free to all parts of England. Lloyd Rayner, 46 De Beauvoir Crescent, Kingsland, N., and 5 The Pavement, Leytonstone, London, E.

Seventy-two second-hand 2-oz. stoppered rounds, new labels, 48s.; 72 6 and 8 oz., most of labels in good condition, 35s.; large second-hand patent specie-jar and cover, on stand, 35s.; 24 6 lb. white ointment-jars, price 2s.; range of 90 second-hand drawers, with gold labels and crystal-glass knobs, lockers under, and cupboard on end, make up 12 feet, with shelving and cornice over, pice 7l.; handsome dispensing-screen, with bent ends 5 ft 3 in. long, 6l. cost 15/-; the entire fittings of a chemist's shop, including bottles, jars, globes, scales, and pill-machine, for 37l.; write for estimates and illustrated lists, free. R. Tomlinson, Medical Fitter, 15 St. Paul's Square, Birmingham.

Special Bargains.—Wall-cases: two 2 ft. 5 long, 3 ft. 3 high, 6 in. deep; one 2 ft. long, 4 ft. high, 6 in. deep; one 3 ft. 4 long, 5 ft. high, 7 in. deep; one 4 ft. long, 4 ft. high, 7 in. deep; one 8 ft. long, 6 ft. high, 10 in. deep; complete wall-cases: one 10 ft. long, 9 ft. high; one 13 ft. 3 long, 9 ft. high, as A 88; one 14 ft. long, 9 ft. high, similar to A 87; one 20 ft. long, ditto; upright cases, with desks: A 32, 50s.; A 30, 31, all sizes; bent-glass counter-cases: A 15, 5 ft. long, 20s.; 6 ft. long, 6l.; A 16, 3 ft. long, 3l.; 4 ft. long, 4l.; A 17, 4 ft. long, 4l.; A 18, 5 ft. long, 6l. 10s.; 6 ft. long, 7l. 15s.; 8 ft. long, 10l.; A 23, 16 in. long, 11s. 6d.; 14 in. long, 10s.; 12 in. long, 8s.; sponge-cases, A 41, 42, 43; show-stands, A 38, 39, 40; dispensing cases and screens: A 53, 4 ft. long, 6l.; A 54, with tablet 3 ft. long, 90s.; 4 ft. long, ditto, 6l.; 5 ft. long, 7l. 10s.; 6 ft. long, 8l. 10s.; massive dispensing-screen, with a plate-glass case at each end, 2 ft. 9 high; mirror with arched head in centre, 3 ft. 9 high; soda-water water stards, 50s., 60s., 75s.; shop-chairs, as B 3 Maw's; flat plate g'a's counter-cases, 6 ft. long, A 8, 7l. 10s.; 8 ft. long, 2 ft. wide, 10 in. high, ditto, 12l.; tooth-brush cases, A 9 and 10. All these goods are new or equal to new, best make, and delivered carriage free to all parts of England. Lloyd Rayner, 46 De Beauvoir Crescent, Kingsland, N., and 5 The Pavement, Leytonstone, London, E.

Formulae.

Fragrant foaming dentifrice (like "Floriline"); marking ink, *sine* silver (aniline), writing executed defies chemicals; effervescent fruit saline (resembles Eno's); magic neuralgic drops (never-failing remedy); quinine and iron tonic (resembles Pepper's); lime-juice and glycerine (inseparable, white as milk); blue-black ink (non-corrosive, *sine* iron or gall); cherry tooth paste (never ferments; like Gosnel's); brilliantine (inseparable, like Rimmel's); pill-coating, (pearly white, no mucilage or mastic used); glycerine jelly (perfectly transparent); crimson marking-ink; hair-restorer (colourless, no deposit, *sine* silver); aromatic vinegar; toilet vinegar (as Rimmel's); plate-powder (like Stevens' "Silicon"); Oleum Flavum Conc., for pomades (colour stable); soluble essence ginger (like Hay's); corn solvent, clear (not acid); liquor copaiba comp. c. buchu et matico (mixes clear with water); gonorrhoea paste, excellent (Dr. Ricord's); taraxacum and podophyllin (resembles Pepper's); with many others; send stamp for list, stating wants. The toilet preparations are identical with those prepared by a wholesale West-end firm; others equally good; all inexpensive to make; 5s. each (five for 12s.). Readers are cautioned against cheap and worthless imitations. I was first to advertise formulae in this journal. "Analyst," care of Mr. Warne, 6 Rochester Square, N.W. (Note change of address.)

Send for my list of recipes, the cheapest and best. "Chemist," care of Mr. Edwards, Wye.

Revive your lavender-water trade by using my famous formula, which with my list I will still forward for 7 stamps. "Devoniensis," Broadhempston, Tiverton.

Tie mixture, toothache application, diarrhoea mixture, fruit saline, all actual trade recipes, of splendid value, both medicinally and commercially. Save time and trouble in perfecting formula by sending 1s. 6d. for each receipt, or 2s. 6d. for two. W. Arthur, 31 Thomas Street, Cleetham Hill, Manchester.

Honest, Reliable Formulae, all in actual commerce, satisfaction guaranteed.—"Glycerine Cream," an elegant preparation for roughness of skin, invaluable at all seaside resorts, certain sale; "Entirely New Remedy for Toothache," gives instant ease, not injurious to other teeth; "Nigerine," jet-black, waterproof paint blacking, cheaper, sweeter, and better than Nubian; "Digestive Relish," best and cheapest sauce in creation, from 3s. gallon; "Lupuline Bitters," equal to American in every respect, one-third price; "Lime and Glycerine," elegant, creamy, snow-white, quite inseparable, pronounced best in market; "Foaming Dentifrice," resembles Floriline, costs one-eighth; "Rheumatic Embrocation," most excellent, cannot be surpassed in cheapness and efficacy; "Blood-purifying Powder" (London surgeon's recipe), popular spring and autumn remedy; "Anti-spasmodic Elixir," simple, reliable, always efficacious; "Carmomile and Quinine Pills" for indigestion, &c., frequently preferred to Norton's; "Effervescent Depurative Saline," *facsimile* of Eno's, costs 10d. lh., entirely soluble, keeps well; "Cryptzmosis," certain speedy cure for gleet, &c.; "Mist. Gonorrhœa" (capiivi), nauseous taste masked, unfailing remedy; "Hair-restorer" (*sine* sulphur), clear, sweet, economical, confidently recommended; "Liver Pills" (vegetable), gentle action, always effectual; "Lavender Water," superb fragrance, lasting, equals Sainsbury's; "Occasional Pills" (for ladies), most reliable, preferred to Widow Welch's; "Essence for Deafnes," simple and effectual; "Podophyllin and Taraxacum," pleasant taste, vastly superior to similar preparations; "Pile Powders and Ointment," cure and prevent hemorrhoids; "Quinine and Iron Tonic," bright and unchangeable, resembles Pepper's; "Worm Syrup," entirely vegetable, pleasant and rapid action; "Ringworm Specific," certain rapid cure; "Tic Pills," unequalled in efficacy, many testimonials; "Chlorodyne," inseparable, perfectly soluble, quite equals Brown's; "Marking Ink," indeible, no waste, creditable to seller; "Fumigating Oxalic Ribbon," cheapest, sweetest, perfect disinfectant. All above guaranteed genuine formulae, are profitable, and may be recommended with confidence. Price 1s. 1d. each, 3 for 2s. 6d., 25 for 12s., post free, with full particulars for making, &c., by T. Brooks, Chemist, Louth, Lincs. N.B.—Detailed list sent post free.

Miscellaneous.

Electroplated air-pistol, in good condition, shoots darts and bullets; offers wanted. 207/34.

Four 3-dz. mineral-water cases with divisions; also 4-gallon copper still, head and worm complete. Robinson, Chemist, Rochdale.

Shower-bath, portable, oak-painted, brass force-pump; equal to new; 30s., or useful exchange. Milligan, Chemist, Haltwhistle. Cans and cisterns for oils, few good sound; low price; full particulars. H., 70 Monier Road, Old Ford, London.

Four sound well-coopered oil-pipes, 12s. each; 20 good clean 10-gallon iron drums, 4s. each; have only contained spirit. Kemp, Hornastle.

Silver coins, as from the Mint, 1d., 2d., 3d., 4d. The set, registered, post free, for 3s. 3d. "Pecunia" Maish, Chemist, Cosham Brow, Bristol. Others.

New portable gas-apparatus, price 60s.; scagliola pedestal spittoon, 6s.; hand-spittoon, 6s.; two gasometers, flattening-mills, and miscellaneous assortment of goods for sale, W. Dongan, 172 Oxford Street, Manchester.

Offers wanted.—Ashton's 3 guinea homeopathic show case: sixteen 11s., twenty-six 4s. 6d. Rocke's elixir; seven 11s., twenty-two 4s. 6d. Crosbie's elixir; six 2s. 9d. Sweeting's elixir, 21/-13.

Ready-mixed paints in tin; French polish; 1-allon tins patent dryers; cart-grease; Virginian pitch; tin measures, patent, all sizes; castor oil, 40-b. tins; few shop stock-bottles; scent and other counter-bottles; various sundries, 211/25.

Ten new 8, 10, and 12 oz. brown elastic syringes and pipes, in perfect condition, for 11s.; gross 12 oz. round-shouldered bottles, white, wide-mouthed, 4s.; 4 oz. Cologne bottles, 6s. gross; extremely handsome window-enclosure, cheap. Deacon, Beckenham, Kent.

Lot shop-bottles, 32-oz., at 8s. 6d. dozen; 1 lb. oil cubebe, 2ls.; argent oxid., 4s. 6d. oz.; ½ oz. elaterium for 7s.; calves' teats, 1s. 6d. oz.; 3 oz. ammon. benzoas for 2s.; 1 lb. sapagumen, 4s.; 1 dozen 13d. Willson's skin pills, 5s.; Atkinson's pot iodid. at 5s. 6d.; 3 and 4 gallon pear carboys at 8s. each. Floyd, Bury St. Edmunds.

Ten gross Stevens' silvery-white gntaperche, 1d. size, 4s. 6d. gross, on show-cards; six dozen 6d. size, on show-cards; job vanilla, 10 lbs., 15s. per lb.; quince salph, unbleached, 25-oz. pot; iodid, 20 lbs.; otto rose virg. 4 bottles; tinture-press, ½-gallon; pulv. rhei, E.L., 7 lbs.; offers wanted. A. Jones, 21 Pierfield Street, Kentish Town, N.W.

Quantity Rimmel's and Sharpe's perfumes, glycerine and lime juice, Egyptian loofahs, United Service soap, Rosseter's restorer, patent medicines, Semolina coro-flour, Howard's quinine, cubets, pill-machine, percolator, circular glass-shade, Leath and Ross's homeopathic medicines, black and white seats, Milealary hair-brushes in leather cases, Oleum lavand exotic, spectacles, steel pens, hair and down sieves, suspenders, soaps. Fowler, Chemist, Portsea.

In consequence of retirement from business—Teats, white, small, 4s. 6d.; medium, 8s.; large, 11s.; black, small, 8s.; medium, 11s.; large, 12s. 6d.; tuhing, white, 5s., black, 10s. per lb.; syringes, glass, ½-oz., 1s. 7d.; 1 oz., 2s. 6d.; 2 oz., 4s.; cold-cream pots, burnt in, ½ oz., 1s. 6d.; plain, 1s. dozen; flesh-gloves, white Turco, sixpenny, 2s. 8d.; shilling, 4s.; corn-plasters, white felt, thin, 1s. 2d. thick, 1s. 9d. gross; bunion-plasters, thin, 2s. 9d., thick, 4s. gross; glass tubes for feeders, 1s. 2d. gross; wood-top corks, 5s. gross; bone shields, 2s. gross. J. Ashton, 75 Crayford Road, Holloway.

WANTED.

Medical Directory (recent). 212 27.

Chemist and Druggists' Directory, any edition; also works upon hernia. 26/21.

Pair large specie-jars; doz. 4-lb. shelf-jars burntin labels. Particulars to 209. 36.

A copper head for a still, about 10 gallons. Delf, Dewsbury.

Recipes for good medical and toilet preparations; particulars to F. Watts, 133 Praed Street, London, W.

Small-sized Apolinaris bottles, old or new pattern. Lowest price to Floyd & Co., Bury St. Edmunds.

A good dental chair; cheap for cash. Particulars to A. Smith, 5 High Street, Newport, Mon.

English or foreign books (or periodicals) on chemistry, pharmacy, manufactures. Send lowest prices to F. Polglase, Newcastle-upon-Tyne.

Latest editions, cheap—Luff's "Chemistry," Thorowgood's "Materia Medica," Hooker's "Botany," Stewart's "Physics," Williams, Apothecaries' Hall, Holywell.

Addresses and Information Wanted.

Andrews, late of High Street, Shoreditch; Beattie, late of 85 Edgware Road; Arthur Mason, late of Weymouth and Hammersmith. 189/34.

GEORGE PATTISON'S LIST OF BATH GLOVES.

ORIGINAL MANUFACTURER:

GEORGE PATTISON, 139 ST. JOHN STREET ROAD, LONDON, E.C.

SOLE PROPRIETOR OF THE "LUNG PROTECTOR" (REGISTERED).

SUPPLIED BY ALL WHOLESALE HOUSES, SUBJECT TO THEIR USUAL TERMS.

THE ORIGINAL

CORN AND BUNION PLASTERS.

INVENTED AND ESTABLISHED BY

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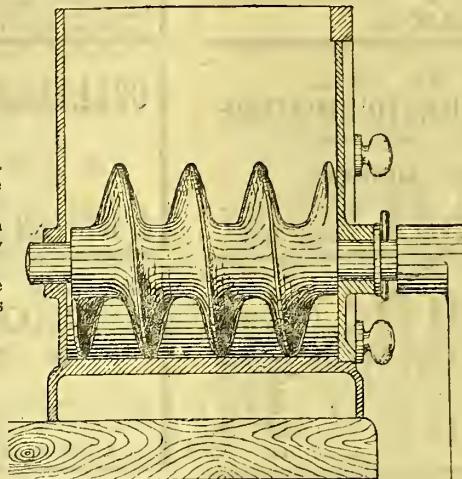
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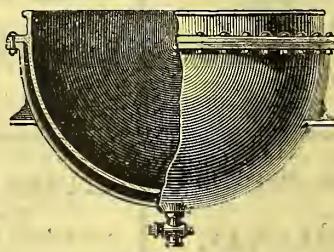
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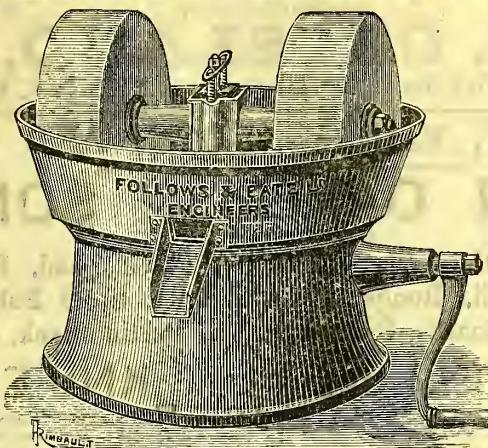
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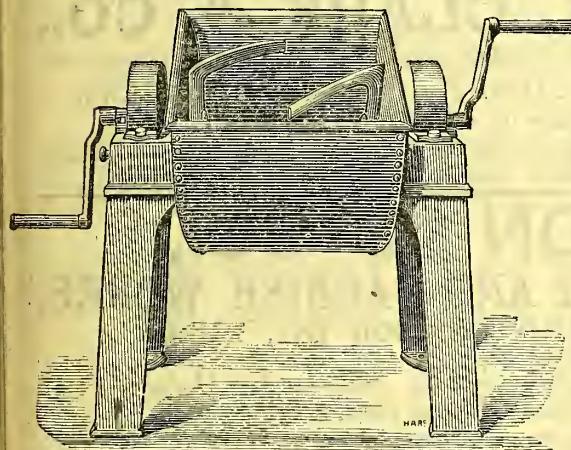
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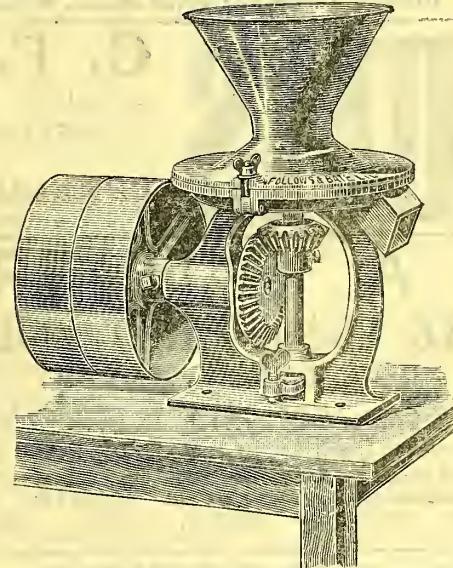
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The roller and pan, revolving at varying speeds, ensure efficient trituration or amalgamation as the case may require. The work is done much better and more quickly than can be done by hand. The springs at the

DRUG GRINDING MILL.



THIS mill can be worked by hand or power. A corrugated cone is set in motion by a pair of strong bevel wheels, shown in illustration, and made to rotate against a fluted concave. By means of a simple adjustment the material under operation can be broken up or ground to an impalpable powder and delivered into a vessel placed under the spout at the side of the Machine. It is recommended for dry, friable materials such as gentian, ginger, rice, certain seeds and the like. It is well made and simple, and therefore not liable to get out of order. Prices—

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With Handle, to work by hand only (new design) £2 10 0

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Prepared expressly for Okey's Patent India-Rubber Knife Boards, Buff Leather Boards, and all the Patent Knife Cleaning Machines. Sold in Packets, 8d. each; and Tins, with perforated Tops to prevent waste, 6d., 1s., 2s. 6d., and 4s. each.

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In 1d., 2d., and 4d. Blocks, and 1s. Boxes.

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PAINTS MIXED READY FOR USE, ALL COLOURS,

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PINK PRIMING PAINT, EXTRA STRONG PATENT DRYERS, PUTTY, &c., &c.
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Put on by Sponge attached to Wire and Cork in each Bottle. No Polishing Brush required. Dries in a few minutes. Can be used by any lady without soiling her fingers.

The "Satin Polish" is the most Elegant Article of the kind ever produced.

LADIES' SHOES, which have become Red and Rough by wearing, are restored to their ORIGINAL COLOUR AND LUSTRE, and will not soil the skirts when wet. TARNISHED PATENT LEATHER is improved by it.

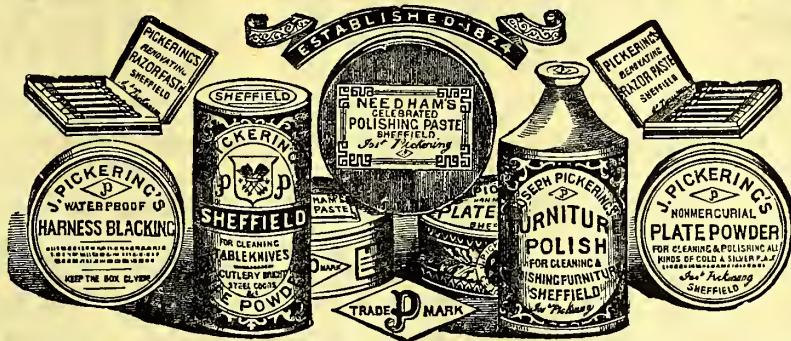
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Established over Half a Century.

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Pickering's Furniture Polish, Plate Powder, Knife Powder,
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DRY COLOURS, all Prices and Shades.

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Draught, or packed in 6d. bottles (8 oz.),
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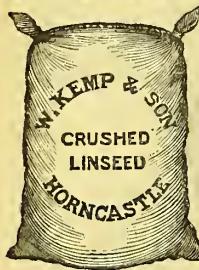
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"IMPERIAL" SOFT SOAP	Manufactured specially for Domestic use, and packed in 1, 2, 3, 3½, 4, and 7 lb. Tins.
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SEED CRUSHERS AND OIL REFINERS,

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RAPE CAKES

FOR MANURE PURPOSES,

WILMINGTTON OIL MILLS, HULL, YORKS.

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"The Analysis of this sample of Linseed Cake is precisely what the Analysis of a first-class Linseed Cake ought to be. I have carefully investigated the Sample in every way, and find it to be a pure and genuine Linseed Cake, in excellent condition.

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GUEST'S FURNITURE POLISH REVIVER. — An entirely new preparation, brilliant polish, little labour, and no finger-marks. In patent air-tight tins.

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Electric Polish! Electric Polish!!

For cleaning Silver, Copper, Brass, Steel, & all bright metals, diminished labour, less trouble and expense, use

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which will make old and tarnished articles bright as new. It is a liquid preparation, and entirely different to anything yet introduced. It contains no acid, mercury, or injurious chemicals, easily applied, and at once produces a bright, mirror-like surface, and lasting. Tradesmen and others who require a polish for their Scales, Weights, Brass Stalls, &c., it is invaluable. For domestic use, Silver, Electro Plate, Steel, Door Handles, &c., it will prove a great boon. When once tried, it will never give place to any other. An outlay of 6d. for a bottle will never be regretted. Price 6d. and 1s. per bottle, of all Chemists.

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Wholesale London Agents—SANGER & SONS; G. B. KENT & SONS; S. MAW, SON & THOMPSON; and SOUTHALLS, Birmingham.

The Proprietor can with every confidence recommend this to the Trade.

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SIR,—I have much pleasure in informing you that the bottle of "ELECTRIC POLISH" I bought of you does even more than you promised it should do. I gave it a fair trial with gold, silver, and brass, and found it to give a far more lustrous and lasting polish than any paste or powder I ever tried, and when once a bright surface is obtained it is some considerable time before it becomes dull again! It needs only to be known to be appreciated. You are at liberty to make what use you like of this letter, and I trust the sale of your Polish will continue to increase, as such a very useful and economical preparation deserves to.

I am, Sir, yours truly.

To Mr. LEWIS, Chemist, &c. M. HERSCANT.

Apsley Terrace, Acton, W., April 10, 1884.

Mrs. CONRAD HOWELL has much pleasure in testifying to the excellency of the ELECTRIC POLISH prepared by Mr. LEWIS. It seems to suit all metals equally; it has completely restored some tarnished silver which Mrs. H. was about to send to a Silversmith to be cleaned. No one who tries it can doubt the result.

ESTABLISHED 50 YEARS.

Exhibitions—1851, 1862; Paris, 1867, 1878.

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To Retail at 1/-, 2/-, 3/- and 5/- See Price List

LEATHART'S COLORIFIC.

A Stain in one preparation; perfect, light, and ordinary browns.

To Retail at 3/-; 24/- per dozen.

EXHIBITION DYE IN BULK.

2/-, 5/-, 10/-, £1. Four Colours.

ONE PREPARATION IN BULK.**MALACCA JUICE.**

Winchester (4 pints), 14s. Sample Bottle, carriage free, 1/-.

AN ORIGINAL PREPARATION. QUICK IN ACTION.

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N.B.—Price List will be forwarded.

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Specialities for Varnishes and Wood Stains.

THE FINEST AND CHEAPEST

SPIRIT BLACK

IN THE MARKET.

BRONZE POWDER, GOLD AND METAL LEAF.

Vermillion, Vermillionette, Ultramarine.

CUDBEAR, INDIGO PASTE, JEWELLERS' ROUGE.

EWENS' CLARIFIED LARD, MARROW,
SUETS, AND OILS.

JAMES EWEN & SONS are induced to give further publicity to these articles, the continued demand by all who have used them being satisfactory proof "that where purity of basis" in ointments, &c., is required, they are most desirable.

By their method of purifying, the fats are not chemically altered, but simply divested of all particles tending to decomposition, they are consequently available for the most delicate preparations.

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CAUTION.—See that each package bears their label with name and weight.

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METALLIC POWDER

Is the best, cheapest, and most effective Powder for cleaning and polishing Metals and Glass (especially Brass). It is used by the Life, Horse, and Dragoon Guards, the Fire Brigades, &c., &c.

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SPIRITUS RECTIFICATUS P.B.

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THE BEST ENGLISH GRAIN SPIRIT
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Special Quotation for Quantity
DUTY FREE FOR EXPORT 4/-

Best BURROUGHS
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Methylated
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For Cleaning Gold, Silver, and Plated Goods.

Since its introduction as a substitute for the ordinary Rouge, a quarter of a century ago, the sale has amazingly increased both at home and abroad. A trial is only needed to prove its superiority over other plate powders in use. Sold in Boxes at 1s. and 2s.; Tins, 6s. 6 Pont Street, Belgrave Square, and 48 Belgrave Road, London, S.W.

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NO SMELL. NO STAIN.

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Of every description, for Painters, Coach Builders, and Japanners.

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Light and Dark Hard Drying Raw and Boiled Linseed Oil and American Turpentine.

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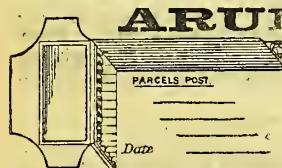
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 WHOLESALE OF
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BY HER MAJESTY'S ROYAL LETTERS PATENT.

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DEODORISERS & ANTISEPTICS.
LIQUID AND POWDER.**

These Preparations are the Invention of Prof. TUSON, of the Chemical Laboratory, Royal Veterinary College, Camden Town.

THE LIQUID is a solution of one of the most powerful non-volatile disinfectants impregnated with the BEST gaseous disinfectant.

THE POWDER. when exposed to the air, but more rapidly when damped with water, or when applied to litter, manure, or other moist substances, evolves the same gaseous disinfectant as the liquid.

Both preparations fix ammonia, prevent putrefaction and the spread of infectious diseases, DESTROY (not merely mask) bad smells, and LEAVE NO SMELL of their own. These combined qualities render them superior to, and unlike, every other disinfectant hitherto invented.

THEY WILL BE FOUND INVALUABLE in Houses infected with Cholera, Fever, Small-pox, Measles, &c.; in Hospitals, Dissecting Rooms, Ships, Factories, Stables, Cow-sheds, Dairies, Larders, Piggeries, Slaughter-houses, Kennels, Urinals, Privies, Cesspools, Water-closets, Sewers, Drains, Manure Heaps, &c.

Note.—For use in Water-Closets, Sinks, Drains, and the like, preference should be given to the Liquid, as the choking of soil-pipes, &c., by solid Disinfectants is thereby entirely avoided.

SOLD BY ALL CHEMISTS.

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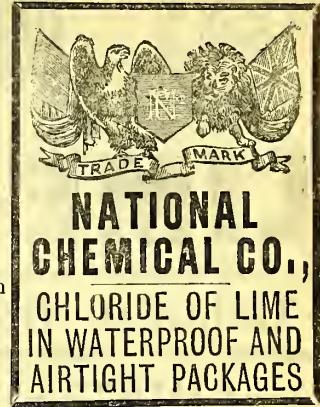
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**CHLORIDE OF LIME
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Waterproof,
Airtight, Neat,
Clean, and
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Odourless,
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will keep for years in
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24-lb. BOXES, containing 24 1-lb. Packages	6/6	Per Box.
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Also in 1 cwt. and 1/2-cwt. Cases, to meet the requirements of large buyers and the Export Trade.

A Liberal Discount allowed on all Orders of 5 Cases or 10 Boxes and upwards. Special Quotations for Contract or Large Orders.

Sample Box or Case can be had from any London or County Wholesale Druggists. All Goods Delivered Free in London.

Write for Prices of the N. C. Co.'s Chloride of Lime in Jars, Bottles, Tin Boxes, Casks, Cases, etc.

NATIONAL CHEMICAL CO.,
29 Suffolk Grove, Gt. Suffolk St., Southwark, S.E.

**PITCH,
OILS, TALLOW, &c.**

**J. R. PEACE & CO.,
26 ALEXANDRA BUILDINGS,**

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IMPORTERS OF AND MERCHANTS IN ALL KINDS OF PITCH, OILS, &c.

Hard and Soft Stearine Pitch | Palm Oil Pitch | Brimstone, Ashes, &c.

Cotton Seed and Patent , Hot Neck Grease Roll and Flour Sulphur

Brown, Vegetable, & Wood , Turpentine & Rosin Tallow, Cylinder Oils, &

Stockholm and Archangel , Soft Soap, Glues, &c. General Produce.

SAMPLES AND LOWEST PRICES ON APPLICATION.

ROBINSON'S ORANGE WINE

(VIN. AURANTII, B.P.)

Specially prepared for Quinine Wine, does not deposit, will keep good in any Climate, and well adapted for Export Trade. Supplied in Casks containing 9, 18, 30, 60, or 120 Gallons. Terms on application.

THE UNIVERSAL CORN AND WART PENCIL.

1 doz. mounted on a handsome Illustrated Show-Card, Retail, 6d. each; Wholesale, 3s. 6d. per doz. It is especially adapted for Export Trade, and may be safely sent to the hottest climates, as each glass tube is hermetically sealed and enclosed in a cardboard case.

N.B.—The above is exempt from Stamp Duty by permission of the Board of Inland Revenue.

CONCENTRATED WATERS.—One Ounce of these Waters added to Forty Ounces of Distilled Water forms a clear Medicated Water (without filtering), similar in every respect to those prepared according to the directions of the British Pharmacopoeia, and free from all Chemical impurity. They are prepared to supply a want long felt by Chemists and Medical Men, and by their use a fresh supply of any of the Medicinal Waters may be obtained at a moment's notice. They are not affected by age in any climate. N.B.—Used in the proportion of one part to thirty-two of water they represent the Medicinal Waters of the United States Pharmacopoeia.



Per lb.	Per lb.	Per lb.	Per lb.
Aqua Anethi, Concent. 4/0	Aqua Cinnam. Ver. Concent. 6/0	Aqua Feniculi, Concent. 4/0	Aqua Pimentæ, Concent. 4/0
" Anisi, " 4/0	" Cassia, " 4/0	" Menth. Pip., " 4/0	" Ross, " 8/6
" Camphore, " 4/0	" Flor. Aurant., " 8/6	" Ang. Con. 6/0	" Ross Virgin, " 10/6
" Carui, " 4/0	" Flor. Sambuci, " 8/6	" Virid., " 4/0	

The above are put up in Bottles of 1lb. or 1lb. and upwards, each of which has the Inventor's Protection Label over cork.

Wholesale Agents—Hearon & Co., Maw, Son, & Thompson, Lynch & Co., London; Evans, Sons & Co., Liverpool; Woolley, Manchester; Bewley & Draper, Hunt & Co., Dublin; Glasgow Apothecaries' Co., Hatrick & Co., Glasgow; Raimes & Co., Duncan Flockhart & Co., J. Mackay & Co., T. & H. Smith & Co., Edinburgh; Fogritt, Thirkle; Goodall & Co., Leeds; J. Richardson & Co., Leicester; Slinger & Son, York; McKesson & Robbins, New York. Special terms for large quantities may be had from

B. ROBINSON, Distiller and Brewer of British Wines, Church St., Pendleton, Manchester



"MONTSEBBAT" PURE LIME-FRUIT JUICE.

150,000 GALLONS IMPORTED IN 1884!

LIMETTA, OR PURE LIME JUICE CORDIAL,
AROMATIC, CLOVE, STRAWBERRY, RASPBERRY, SARSAPARILLA,
PINEAPPLE, JARGONELLE, PEPPERMINT, QUININE.

NOTICE TO THE TRADE.
Special attention is called to the above, which now meet with a steady demand.
Special Terms for 1 gross upwards. Showcards and Bills supplied on application.

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A. LLOYD & SONS,

BUSH LANE, CANNON STREET, LONDON, E.C.,
PACKING-CASE MAKERS, TIN-PLATE WORKERS,
STEAM LITHOGRAPHERS & GENERAL PRINTERS, & Manufacturers of IRON SHOW TABLETS,
DECORATED AND PLAIN TIN CANISTERS

For Packing Tea, Coffee, Confectionery, Mustard, Spices, and Drugs;

METALLIC CASKS AND OIL DRUMS AND BOTTLES.

Boxes, Trays, Crates, and Cases of all kinds for Aerated-water Manufacturers.

Also Manufacturers of all kinds of PACKAGES in WOOD and TIN, suitable for sending any articles by the PARCELS POST.

ESTIMATES FORWARDED ON APPLICATION.



KING'S EFFERVESCENT CITRATE OF MAGNESIA

Is the BEST PREPARATION ever introduced for the use of EMIGRANTS, TRAVELLERS, AND INHABITANTS OF WARM OR TROPICAL CLIMATES.

This Citrate has been patronised by Royalty, by Her Majesty's Diplomatic Agents Abroad, and was awarded a Prize Medal at the Exhibition of 1851.

NUMBERS of the MOST EMINENT PHYSICIANS AND SURGEONS in London and throughout the kingdom use KING'S MAGNESIA for THEMSELVES AND FAMILIES, and have given certificates testifying that it is THE BEST AND MOST AGREEABLE APERIENT EVER INTRODUCED, and that in ALL CASES OF SICKNESS, HEADACHE, LASSITUDE, ACIDITY or IRRITABILITY of the STOMACH, CONSTIPATION, &c., &c., it can be used with the GREATEST SAFETY and BENEFIT, and as a COOLING DRAUGHT in ALL cases of FEVER it has NO EQUAL.

TESTIMONIALS have also been received from CAPTAINS OF VESSELS and OTHERS who have made voyages to the BRAZILS and other TROPICAL PARTS, and have ESCAPED THE YELLOW AND OTHER FEVERS, while DAILY EXPOSED to the INFECTION; and attribute their EXEMPTION (when others have succumbed) to the PREVENTIVE effects of KING'S EFFERVESCENT CITRATE OF MAGNESIA; and they RECOMMEND that the Citrate should be taken by EVERY EUROPEAN wishing to VISIT or RESIDE IN SAFETY in TROPICAL or FEVER-PREVALENT CLIMATES.

A small teaspoonful of the Citrate in a tumbler of cold water makes an AGREABLE COOLING EFFERVESCENT BEVERAGE.

Sold only in Glass-stoppered Bottles by Chemists and Druggists everywhere, and by the Sole Manufacturers and Proprietors—

BATES & CO., 1 REGENT SQUARE, LONDON, W.C., ENGLAND.

Be sure to get KING'S EFFERVESCENT CITRATE OF MAGNESIA, which will give entire satisfaction.

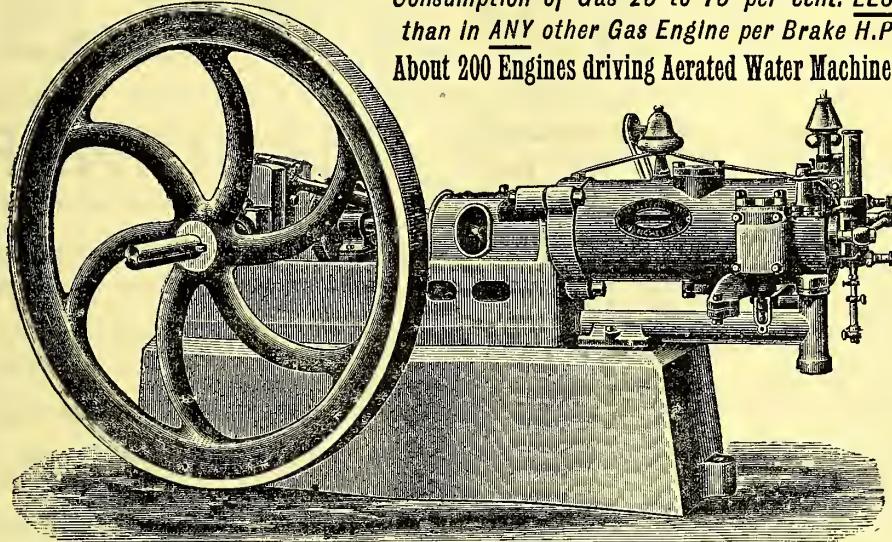
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"OTTO" GAS ENGINE.

OVER 14,000 IN USE.

13 SILVER MEDALS. 16 GOLD MEDALS.

*Consumption of Gas 25 to 75 per cent. LESS
than in ANY other Gas Engine per Brake H.P.
About 200 Engines driving Aerated Water Machines.*



CROSSLEY'S NEW VERTICAL "OTTO" ENGINES.

Requiring very little ground space.

CROSSLEY'S PATENT SELF STARTER.

The Safest, Simplest, and Best.

CROSSLEY'S PATENT TWIN ENGINES.

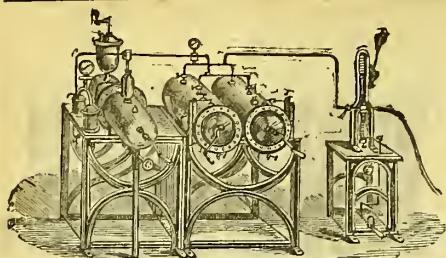
Impulse every revolution. Very steady in running.

THE ONLY GAS ENGINE WHICH RECEIVED A GOLD MEDAL AT THE PARIS ELECTRICAL EXHIBITION.

CROSSLEY BROS., LIM., OPENSHAW, MANCHESTER

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SODA WATER MACHINE COMPLETE, WITH RACK.

AND ALL REQUIREMENTS OF EITHER TRADE.
SEPARATE CATALOGUES, POST FREE.

BEFORE BUYING, SEND FOR CATALOGUE TO
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BARRETT'S PATENT BOTTLES.

CROSSLEY'S AND "BISSCHOP" GAS ENGINES.

CHEAVIN'S FILTERS.

WILKINSON'S PATENT BEER BOTTLES.

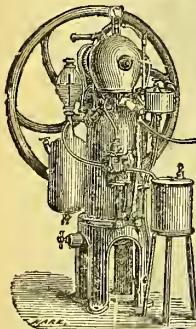
H. FAVARGER.

GOLD MEDAL]

MONDOLLOT'S PATENT

[PARIS, 1878.

SODA WATER MACHINERY.



- The "MEDIUM" is guaranteed to make extra sharp Soda Water, and the finest Lemonade, Ginger Beer, Ginger Ale, &c.
- The "MEDIUM" requires no skilled labour, and can be worked by hand or steam power.
- The "MEDIUM" saves 50 per cent. of materials over any other hand machine, and requires less power.
- The "MEDIUM" will last for years without repairs beyond the renewal of washers.
- The "MEDIUM" requires no gasometer, and occupies but a quarter of the room of an ordinary machine.
- The "MEDIUM" is automatic in all its work, and merely requires the wheel to be turned.
- The "MEDIUM" is of the finest workmanship, and is in use all over the world.

Apply for illustrated Catalogue to
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SODA WATER & ICE

MAKING MACHINERY

AND ALL APPLIANCES FOR THE TRADE

BY

BARNETT & FOSTER

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SEND FOR CATALOGUE

INVENTORS & MANUFACTURERS,
EAGLE WHARF ROAD, LONDON,

FORWARDED FREE.

The Catalogue above referred to comprises every requirement for the Chemist in the way of Manufacturing and Dispensing
all kinds of Aerated Waters.

GUERET NC FRÈRES,

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ENGINEERS, PATENTEES IN FRANCE AND ABROAD OF
IMPROVED MACHINERY FOR THE MANUFACTURE OF SODA-WATER.

GOLD MEDAL, AMSTERDAM, 1883.

APPARATUS GAZOSELTZ CONTINUAL.

Without Gasometer, with automatic distribution of the acid. The only ones which work under a regular pressure as long as the operation lasts.



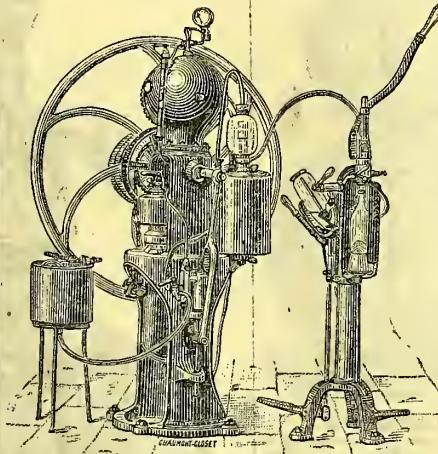
Siphons,
Short lever.

PRICE—

20/6 per dozen.

All the fittings manufactured by ourselves, and
of the best workmanship.

PURE ENGLISH TIN, FIRST QUALITY.



Complete Plant, Model No. 1,

Showing the Generator with Combination filler (for bottles and siphons), Price £48. Production 1,200 siphons or bottles daily
PROSPECTUS FREE ON APPLICATION.

New system, based on the
principle of Mariotte's bottle.

Automatic and continuous
production of the gas, permitting
the indefinite preservation of the gas purifiers.

No gasometer required.

No manipulation of the
acid tap required.

Safety. All risk of
explosions avoided.

L'HÔTE'S APPARATUS (Patented S.G.D.G.)

FOR SELTZER WATER & AERATED BEVERAGES.



This Apparatus is made entirely in PORCELAINE. No Repairs necessary. No Explosions possible. The cheapest of Table Apparatus.

PRICES :—

Two Bottle Apparatus .. 5fr. 75c. (4/7)

Three-Bottle Apparatus .. 8fr. 25c. (6/7)

Powders for the Two-bottle Apparatus (Ten charges) 1fr. 20c. (1/)

Powders for the Three-bottle Apparatus (Ten charges) 1fr. 80c. (1/6)

1/7th of actual size.

Discount to Pharmacists and Druggists.

F. PAQUET, Manufacturer,
1 Cite Trevise, PARIS.



EUGENE GERAUT & CO.,

PATENTEES AND MANUFACTURERS OF

SODA WATER MACHINES, FILLING MACHINES
SYPHONS, SELTZOGENES, &c., &c.,

139 & 141 FARRINGDON ROAD, LONDON, E.C.

Late 1 and 2 CORPORATION BUILDINGS.

**SYPHONS.**

Clear or coloured glass (white, blue, green, or yellow), pure ENGLISH BLOCK TIN TOPS, with piston or cap.

22/6

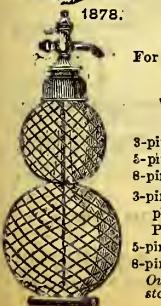
per dozen, for quantities of not less than one gross.

Packing in Cask, 5/- per gross.

The Name marked on the metals free of charge for quantities of not less than one gross.

The Name engraved with Trade Mark, from 1/6 to 2/6 per dozen extra.

Illustrated Catalogue on application.



1878.
NEW PATENT LEVER SELTZOGENES.

For immediate production of Eau de Vie, Soda Water, Sparkling Lemonade, and Aerated Waters.

First introduced by EUGENE GERAUT & Co. in 1853.

WHOLESALE PRICES

as follows :—

3-pint Size, Wire, 13/4;	Cane, 13/6
2-pint " " 18/0;	19/0
8-pint " " 30/0;	32/0
3-pint Size, strongly silver-plated, richly decorated	48/-
Porcelain stands ..	each 30/0
5-pint ditto	38/0
8-pint ditto	48/-

Our well-known Seltzogenes are improved yearly, and have already stood a public test of upwards of Twenty Years, and are acknowledged as THE VERY BEST.



SIX PRIZE MEDALS AWARDED—TWO GOLD.
For very superior quality, make, and special excellence in finish.

**THE BRITISH SYPHON
EUGSTER & KOERTGEN, PROPRIETORS.**

2 GRESHAM BUILDINGS, LONDON,

E.O.

Works:
Wickham St., Lambeth.

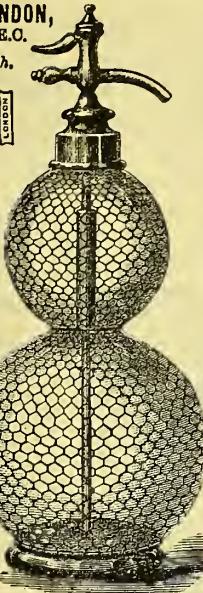


Specimen of Trade Mark engraved on the Syphon Bottles by the acid process at 1½d. and 2d. per bottle extra.

Name stamped on the metal tops free for orders of one gross.

IMPORTANT.—In ordering our Seltzogenes through Agents, distinctly state that you require the Lion and Shield brand, and see that you get it, as often others inferior are substituted.

All our apparatus are stamped thus—
GUARANTEED PERFECT, and of first-class workmanship.



SYPHONS.

Short Lever. 22/6 per doz. net.
Long 24/0
White, Blue, Amber, or Green Bottles.
Octagonal-shaped Bottles, 1/6 per dozen extra.

Silver-plated tops, 9/- per dozen, extra.

Special Quotation for Large Quantities. Each Seltzogene and Syphon thoroughly tested before sent out. All metal warranted free from lead.

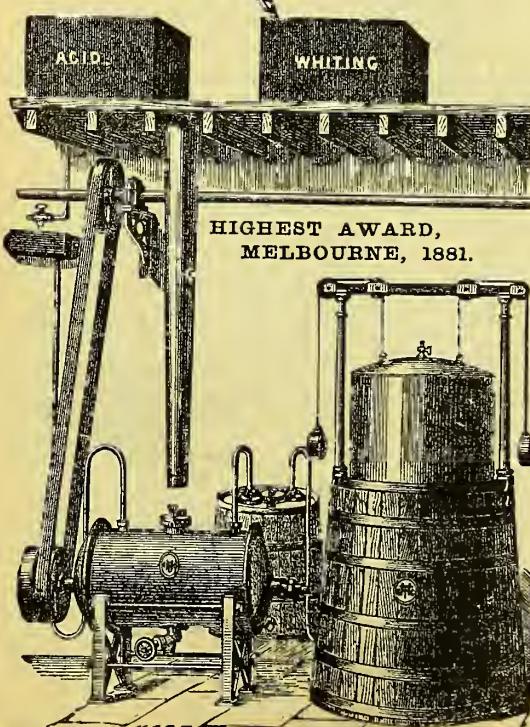
SELTZOGENES.

3 pint wire covered, 13/- cane covd. 13/6
8 " " 18/- 19/-
8 " " 30/ -

Silver-plated Wire or Top, 5/- extra.
Drop Cups, Measures, Fittings &c. Repair
parts, &c. Liberal discount.

HAYWARD TYLER & CO.

GOLD MEDAL, PARIS, 1878. [2]
GOLD MEDAL, CALCUTTA, 1884.



HIGHEST AWARD,
MELBOURNE, 1881.

84, 85 Whitecross Street, London.

BARNETT & FOSTER,

"Niagara Works," 26th Eagle Wharf Rd., London, N.

Having completed extensive alterations and additions in our premises and plant, we are now enabled to execute orders of any magnitude for our celebrated "LONDON MADE" SYPHON BOTTLE (which has earned such high reputation for being the simplest, safest, and most elegant syphon in the market) with punctuality and dispatch, at the same time guaranteeing the best workmanship and materials. Special attention is called to the patent "Octagonal" vase, which adds greatly to the appearance of the syphon without very greatly increasing the cost, and which is fitted at the base with groove so that drips from the spout run down the sides and are prevented from soiling the table.



NOTE GROOVE IN BASE (PATENTED).

PRICES (White, Blue, Green, or Amber):—

	By the gross,	Less than 1 gross,
	per doz.	per doz.
Quart size	£1 2 0	£1 4 0
Pint size	1 1 0	1 3 0
Half-pint, Pear shape	1 0 0	1 2 0
Octagonal vases, any colour	1 4 0	1 6 0

Tops nickel-plated, from 5s. 6d. per doz. extra. Tops silver-plated and burnished, from 9s. per doz. extra. Special Prices and Terms to large Buyers.

NOTE.—Syphons made with our patent foot for collecting excess of liquid dripping from the spout after use are supplied at no extra charge, and will be found of great utility in preventing stains, &c., upon table linen. This is a desideratum long been wanting, particularly for private house use. Send for sample forwarded upon receipt of 2s.

INTERNATIONAL HEALTH EXHIBITION, 1884.

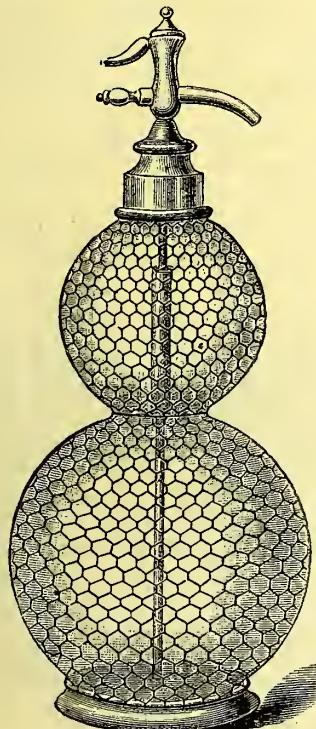
SOUTH KENSINGTON, LONDON.

Visitors to the above Exhibition are specially invited to examine our splendid exhibit in the Western Gallery, Stand No. 1,256, where our syphons can be seen, and a complete mineral water manufactory with all latest improvements is in actual daily operation.

THE
IDRIS
SELTZOGENE.

Unequalled in Style and Finish.

CANE OR WIRE COVERED.



For Price List and Terms,

APPLY TO THE

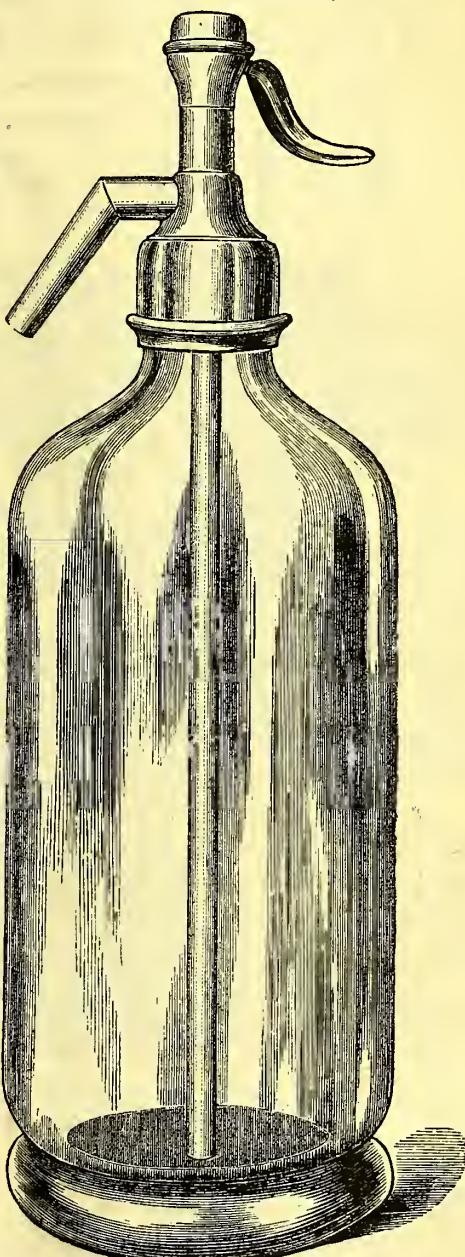
IDRIS

MANUFACTURING COMPANY,

ASCHAM STREET,

LONDON, N.W.

THE
IDRIS SYPHON
Is the best in the Market, combining the elegance of the French with the strength and superiority of English workmanship.



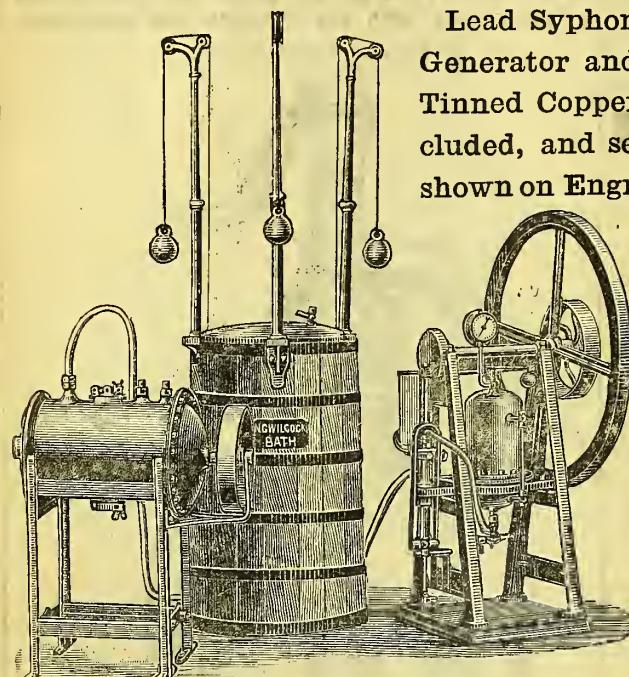
Intending purchasers should apply for samples and prices, before placing their orders, to the

IDRIS MANUFACTURING CO.,
Ascham Street, London, N.W.

Tops guaranteed to be made of Best English Tin and free from Lead.

WILCOCK'S "VICTORY"

HIGH-CLASS SODA WATER MACHINE.



Lead Syphon, Acid Box, and Manual Handles for Generator and Machine; also Buoy Valve for the Tinned Copper Solution Pan and Spanners are included, and sent with each Machine, although not shown on Engraving, and the Gasholder is of Copper.

Recipes and Directions for Working are included.

This machine makes a highly-charged gaseous water, free from metallic contamination or foreign impurities.

Z Plant makes 400 doz. large bottles per day ... £42 10 0 £3 15 0
Packed in Cases

Y Plant makes 600 doz. large bottles per day ... 52 10 0 4 10 0

X Plant makes 1,000 doz. large bottles per day ... 62 10 0 6 10 0

SODA WATER MACHINERY

AND ALL ACCESSORIES

FOR THE TRADE BY

BRATBY & HINCHLIFFE

AERATED WATER ENGINEERS & MANUFACTURING CHEMISTS.

ICE MAKING MACHINERY A SPECIALTY

CATALOGUES, CIRCULARS & TESTIMONIALS POST FREE.

FOR FURTHER PARTICULARS ADDRESS

POTT STREET, ANCOATS, MANCHESTER

VALLET'S PATENT IMPROVED STOPPED BOTTLES,

For Mineral Waters and Gaseous Liquids,
Are now used by upwards of 1000 Soda Water Manufacturers
in the United Kingdom.

PRICES (Per Gross).—Patent Stopper, as per Fig. 1. 4/6; ditto, as Fig. 6, 4/6; ditto, as per Fig. 7, 4/6; Patent Stopped Bottles, ready for use; ditto Half Bottles, ditto; Patent Unstopped Bottles; ditto Half Bottles; Fig. 9. Boxwood Bottle Openers, polished, 8/6; ditto, fitted with rubbers, 10/6; Common Wood Bottle Openers, 5/6; ditto, fitted with rubbers, 7/6; Fig. 10. New Bottle Opener, 6/-.

ROYALTY FREE.



Fig. 2.



Fig. 6.

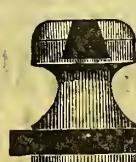


Fig. 1.



Fig. 7.

It will be seen by reference to figs. 6 and 7 that I now form a button or nut under the base of my Stopper for the purpose of easily extracting same from the Bottle without spoiling or removing the india-rubber from the body of the Stopper. This is readily accomplished by the use of a suitable tool made to fit on the nut; the Stopper being grasped as withdrawn from the bottle in a second, without injury to the Stopper.

Therefore, it will be a great saving to Mineral Water Manufacturers, as by the old way of extracting the Stoppers from the Bottle, when necessary, very often the india-rubber is spoiled, and the time it takes by this slow process is worth more than the Bottle itself; so that in many instances Bottles with spoiled or dirty Stoppers are put aside as worthless stock.

Figs. 1 and 6 Stoppers, when invoiced without Bottles, are ready fitted with the rubber washer on, and are easily inserted into the Bottle by the simple pressure of the thumb, the washer at the same time folding in the hollow part of the stem, when passing into the Bottle. They are the only Stoppers which require no tool to fit into the Bottle; and when a Bottle breaks, which seldom occurs, the Stoppers are always fitted with washer and ready to be inserted in a new Bottle. Therefore they are the most durable and inexpensive Stoppers in the Trade.

Sample and Particulars sent on application to

L. VALLET, 49 EVERTON RD. LIVERPOOL.

MUMBY'S MINERAL WATERS

Are Perfectly Pure and of First-class Quality.

CHARLES MUMBY & CO.

Have had the honour of supplying their Mineral Waters to
HER MAJESTY THE QUEEN,

And the following members of the ROYAL FAMILY :

H.R.H. The Prince of Wales, K.G.

H.R.H. The Duke of Edinburgh, K.G.

H.R.H. The Duke of Connaught, K.G.

H.R.H. The Late Prince Leopold, Duke of Albany, K.G.

H.R.H. Prince Christian, K.G., and

H.I.H. The Crown Prince of Germany.

IMPORTANT TESTIMONIAL.

H.M.S. "SERAPIS," Portsmouth, 25th May, 1876.

Messrs. C. MUMBY & Co.,

Gentlemen.—The Soda Water supplied by you for the use of H.R.H. The PRINCE OF WALES on board H.M.S. "Serapis" was of excellent quality, kept in good condition, and gave great satisfaction to His Royal Highness, his suite, and the officers of the ship.

(Signed) THOMAS BRADBIDGE, Paymaster.

T. W. SCADDEN, Chief Steward.

These Celebrated Waters can be supplied in
Siphons with Silver-plated Tops.

GOODS CARRIAGE PAID. PRICES ON APPLICATION.

34 THE HARD, PORTSMOUTH.

CANTRELL & COCHRANE'S
CELEBRATED
AROMATIC GINGER ALE,
SPARKLING MONTSERRAT,
CLUB SODA, AND
MINERAL WATERS,

As supplied to Her Majesty's Imperial Houses
of Parliament,

Have been Awarded TWENTY GOLD AND
PRIZE MEDALS at the various International
Exhibitions.

Goods for Export are specially prepared, and are guaranteed
to keep in any climate.

PRICES AND TERMS ON APPLICATION TO—

CANTRELL & COCHRANE,
BELFAST AND DUBLIN.

EVANS' SALINE EFFERVESING.

This preparation is a mixture, in definite proportions, of Howard's Chlorate of Potash, English Tartaric Acid, Bicarbonate of Soda, and a little Cane Sugar. The proportion of these ingredients is fixed, and always remains the same. This, and the pleasant excess of acid, characterises Evans' Saline. A dry mobile powder, dissolving perfectly.

Bottles with Chemists' own name, or in bulk.

For further particulars as to price, &c., see price list.

EVANS, SONS & CO.,

56 Hanover Street,

LIVERPOOL.

EVANS, LESCHER & WEBB,

60 Bartholomew Close,

LONDON.

PARIS and MONTREAL.

KINMOND'S APNEUMATIC MINERAL WATERS

SPECIALITIES:

GINGER ALE (AROMATIC).

ORANGE CHAMPAGNE.

FRUITY CHAMPAGNE.

SPARKLING PHOSPHORETTA.

Made by an entirely New and Special Process,
SO THAT THEY IMPROVE BY KEEPING.

Trade List post free from the Manufactory,

LEAMINGTON.

BINGLEY'S SUPERIOR GINGER ALE,

An Aromatic and Non-Intoxicating Stimulant.

Manufactured by a Special Process worked out by the Proprietor, by means of which the AROMATIC properties and TRUE DELICATE FLAVOUR OF JAMAICA GINGER are fully retained. It is confidently offered as a very superior article.

The following are a few of the opinions which have been expressed in reference to

BINGLEY'S GINGER ALE.

The Chemist and Druggist of January 15, 1883, in an article on "GINGER ALE," says, speaking of the Ginger Ale manufactured by Mr. BINGLEY, of Northampton:—"We are bound to report most favourably. Very few makers have succeeded in so perfectly presenting the odour and aroma of Jamaica Ginger in a clear, bright, sparkling beverage."

The Midland Medical Miscellany of August, 1883, in a note referring to BINGLEY'S AERATED WATERS, says:—"We are particularly pleased with the Ginger Ale, which, as is not always the case, really presents the flavour of Ginger."

THE FOLLOWING ARE A FEW OF THE OPINIONS EXPRESSED BY CHEMISTS AND OTHERS:

"Excellent in every way."

"I like the Ginger Ale very much."

"We have tasted the Ginger Ale, and like it very much; indeed, it is the best thing of its kind we have met with."

"We have received the case of Ginger Ale, and have tasted a bottle with one of . . . We think that your article has the advantage in point of delicacy of flavour."

"Having carefully tasted the Ginger Ale you were good enough to send me, and also submitted it to the judgment of a friend in the trade, I can say of it advisedly in terms of high recommendation. The aroma is very fine, and the full, generous warmth in the mouth is as near perfection as possible."

"I will write you about the Ginger Ale; it is first rate."

"Capital stuff is this Ginger Ale."

"The sample of Ginger Ale you were good enough to send me appears exceedingly good, and I shall be glad if you will send me one case at your convenience."

"Your Ginger Ale is excellent, and I shall be very glad if you will send me a case."

"Your sample of Ginger Ale is everything that can be desired. The fine flavor of the Ginger alone shows the care with which the essence has been prepared; it will certainly command a line in my next order."

"I have received the sample of Ginger Ale, and beg to state that it is the best I have ever tasted."

"I am pleased to say that so far the customers we have supplied with your Ginger Ale have been very pleased with the same."

"Your Ginger Ale is very delicious."

"The Ginger Ale arrived a week ago; I think it is very nice indeed."

"I certainly have not yet tasted anything to touch it."

MANUFACTURED BY

JOHN BINGLEY, Analytical Chemist, NORTHAMPTON.

All persons who are interested in such beverages, either for the Home or Export Trades, are earnestly invited to send for samples, which will be supplied gratis.

FOUND AT LAST! WHAT?

A Temperance Beverage brewed entirely from Malt and Hops and absolutely free from Alcohol.

In proof of this, see Dr. O. BOSTOCK HILL's (County Analyst, &c.) report upon each label.

BY
ROYAL
LETTERS
PATENT.

SALUS

Has a pleasant flavour. Is a good appetizer, the best Hops only being used. Is refreshing and stimulating, without the injurious effects of Alcohol.

Sample orders of 6 doz. Champagne Pints sent, carriage paid to any Railway Station in England, on receipt of 28s.; 10s. allowed for case and bottles when returned to the

SALUS MANUFACTURING COMPANY,
Gladstone Road, Birmingham.

NEW AND IMPORTANT DISCOVERY. **GINGER ALE** FROM PURE JAMAICA GINGER.



ABSOLUTELY PURE.—
See Analysis by Dr. J. H. HARSTON, F.R.S.,
M.D., and Otto HENRY, F.O.S.

The difficulty of using Ginger in the Manufacture of "Ginger Ale," and at the same time having a CLEAR and SPARKLING DRINK, has, after much labour and expense, been thoroughly overcome by

Meers. HARSTON & CO., of LEEDS.

"ABSOLUTELY PURE."
SEE ANALYSIS, sent post free on application.



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RUTHIN
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ESTABLISHED 1825.

"CRYSTAL SPRINGS." Renowned for their purity for HALF-A-CENTURY. Situated on the premises, and exclusively the private property of the Firm.

Soda, Potass, Seltzer, Lemonade, Aromatic Ginger Ale. For Gout; Lithia Water, and Lithia and Potass Water. Corks branded—"R. ELLIS & SON, RUTHIN," and every Label is registered, and bears their Name and Trade Mark.

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London Agents: W. BREST & SONS, Henrietta St., Cavendish Square.

SODA, POTASH, SELTZER, AERATED (without Alkali), and LITHIA WATERS, LEMONADE AND GINGER ALE.

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Purity and Excellence of the Water certified by Analysis by Professor ATTFIELD, Ph.D., F.C.S.

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THE ONLY MEDAL,
LONDON, 1881.

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THE HIGHEST MEDAL,
BRADFORD, 1882.

WATERS ASSOCIATION, LTD.

This being the ONLY Company that supplies *exclusively* to Hospitals and Chemists Manufactured Mineral Waters of the highest class and of specified formula, the Directors beg to hand you at foot prices for same in Bottles and Syphons, and trust to be favoured with a sample order.

		Bottles, per doz.	Syphons.
Carbonated Water	... ... ...	at 1/0	1/6
Soda	5 Grains to half-pint	" 1/0	1/6
Soda	B.P., 15 "	" 1/0	1/6
Potash	5 "	" 1/0	1/6
Potash	B.P., 15 "	" 1/0	1/6
Seltzer	"	" 1/0	2/0
Lemonade	... ... ...	" 1/3	
Lime Juice	... ... ...	" 1/3	
Ginger Ale	... ... ...	" 1/3	2/6
Ginger Beer, Glass	... ...	" 1/3	
Lithia, B.P., 5 Grains to half-pint	... ...	" 1/9	
Iron and Quinine Water	... ...	" 1/9	
Mineral Acid	... ...	" 1/9	

Bottles, at per doz., 1/6. Syphons at 24/. Cases, 3 doz., 3/6; 4 doz., 4/6; 6 doz., 5/6. Syphon Cases, 2/6.

Sparkling Rubine and Sparkling Limine, pints, at 3/2 per doz., bottles included. Six doz. at 3/, and 30 doz. at 2/10. Special terms for 5 gross and upwards bottled goods. Natural Mineral Water supplied at lowest prices. For further particulars apply to

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AN EMINENTLY RESTORATIVE MINERAL WATER.
Contains Chloride of Soda, Bicarbonates, Arsenics (28 millig. of arseniate of soda per litre).

Dose: Half a glass to three glasses per day before or during meals.

A Regenerator for Weakly Children, and for Debility in Adults; also in Anæmia, Fatty Degeneration, Affections of the Skin and Respiratory Organs, and Intermittent Fevers. Employed as a drink and in gargles for Bronchitis and Sore Throat, and as a drink and lotion in Ringworm, Chaps, and Redness of the Skin.

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MANUFACTURERS OF

SODA, POTASH, LITHIA, AND SELTZER WATERS,
LEMONADE, AND AROMATIC GINGER ALE.

4-dozen and 6-dozen Cases Carriage Paid.

Prices and Pamphlet on application. Agents appointed.

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YORK STREET, WALWORTH, LONDON, S.E.

ESTABLISHED OVER 40 YEARS.

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MERCURIALS of every kind,
SWEET SPIRITS of NITRE,
SAL VOLATILE, B.P. & P.L.,
PURE VEGETABLE COLOURS of every description, in Sugar and Paste
(to this department W. B. & Co. have given special attention, to meet the requirements of the trade);
GLACIAL ACETIC ACID,

CONFECTI ON E R Y
FLAVOURS of every kind, and

FRUIT ESSENCES.

SUPER ESSENCE of LEMON only,

MINERAL ACIDS of every kind,

TARTARIC, CITRIC, and other ACIDS (not makers of these, but in a position to offer),

BORACIC ACID, &c.

SOLE PROPRIETORS OF

MARIGOLDINE,

NEW COLOUR FOR BUTTER, CHEESE, &c.



After a lengthened investigation, the Proprietors are enabled to offer this novel preparation, representing the rich colour of the Marsh Marigold, in a highly concentrated form. Being a Vegetable Extract, it will be found to impart to Butter a beautiful golden colour, free from taste, possessing its natural odour, and as pure as the herbage on which the animal feeds.

It is well known that in the Spring or Summer the rich colour of Butter is derivable from the Marsh Marigold and Ranunculus (Buttercups) of our pastures, and it has been the aim of the Proprietors to produce an article that will enable the dairyman to obtain uniformly the same results at all times of the year, in the most agreeable form; and it is confidently believed that it will be found superior to every preparation hitherto sold for the purpose. Its perfect compatibility with oil and grease of every description (not watery compounds) makes it useful for many other purposes in which it is desired to obtain a rich and delicate golden tint.

Sold by Chemists, &c., and Wholesale Houses.

W. B. & Co. solicit inquiries, and will be happy to furnish Samples and Prices at all times.

HAY'S SOLUBLE ESSENCE OF MESSINA LEMONS, FOR THE PRODUCTION OF THE FINEST LEMONADE.

Added in the proportion of one fluid ounce to each gallon of syrup, the soluble essence imparts the most delicious flavour of the Lemon.—*The Chemist's Journal.*



The Essence mixes well with water, and has a delicate flavour. The Lemonade made therewith has a far more delicate flavour than that generally met with.—*The Chemist and Druggist.*

Trade Price, 8/6 per lb.; 12 lbs. and upwards, 8/-.

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W. HAY, Manufacturing Chemist,
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HAY'S GINGER CHAMPAGNE

CAN BE OBTAINED FROM THE SOLE AGENTS,
INGRAM & ROYLE,
119 QUEEN VICTORIA STREET, LONDON, E.C.,
AND BATH BRIDGE, BRISTOL.

Retail Price, in Half Champagne Bottles, 5/6 per doz.

This SPARKLING, EXHILARATING, and REFRESHING DRINK, while being far more agreeable in bouquet and flavour than the FINEST CHAMPAGNE WINE, is, at the same time, unlike it, FREE from ALCOHOL.

It is strongly recommended both for Juveniles and Adults, &c., as the most Wholesome Stimulating Beverage that has hitherto been introduced, and should be in every household during all seasons of the year.

Samaritan Free Hospital, Lower Seymour Street,
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Dear Sir,—I have tried your Ginger Champagne, which I find to be excellent, and I look upon it as a step in the right direction towards meeting a long-felt want. Our Senior Physician, Dr. Henry Savage, has also tried it, and is much pleased with it. We ought long ago to have had such a beverage, and I believe that a great deal of drinking world thins have been prevented. I wish your effort much success.

I am, dear Sir, yours faithfully,
GEORGE SCUDAMORE, Secretary.

An excellent and most agreeable beverage.—*The Lancet.*

Made by Mr. Hay, of Hull, with his well-known SOLUBLE ESSENCE OF JAMAICA GINGER, takes rank as a PURE, WHOLESOME, STIMULATING, and NON-ALCOHOLIC beverage.—*British Medical Journal.*

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PURE SODA, SELTZER, POTASH, LITHIA, &c.,
LEMONADE,
GINGER ALE, AND QUININE TONIC.

Prepared and Bottled specially for Export, and warranted to keep well.

Manufactured with the utmost care and by improved machinery, these productions are recommended for purity and excellence of quality by many leading members of the Medical Profession, and have for many years had a preference by the public; the flavour of the Lemonade and Ginger Ale being procured from the fresh Fruit and Finest Jamaica Ginger, they may be relied upon as furnishing delicious and satisfactory beverages, either for general use or specially for invalids.

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Ginger Ale (Aromatic) of superior quality, and strongly recommended as a Non-Alcoholic and warm stimulant beverage.

N.B.—Every Bottle is protected by a distinctive Label, with Name and Trade Mark, and each Cork is branded.

Counter Bills and Analytical Reports, with Agents' Names and Addresses, supplied when requested.

A CERTIFICATE OF MERIT, for superiority of quality, was awarded to Jewsbury & Brown at the Exhibition of Sanitary Appliances, at Owens College, Manchester, on the occasion of the Meeting of the British Medical Association, August, 1879.

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SIR,—
IN order to keep before the Medical and Pharmaceutical Professions the latest authentic researches with regard to Natural Mineral Waters, I beg to call your attention to the following references which have appeared since the issue of the pamphlet on "Æsculap."

In Dr. Sydney Ringer's "HANDBOOK OF THERAPEUTICS," 10th edition, 1883, p. 220, is the following:—

"An excellent way to administer some of these Salts (Sulphate of Soda and Magnesia) is in the form of

"PERHAPS, BEST OF ALL, ÆSCULAP WATER,

"in doses varying from a wine-glassful to half a tumblerful or more."

In the "MINERAL WATERS OF EUROPE," 1883, by Professor Tichborne and Dr. Prosser James, ÆSCULAP BITTER WATER is placed at the head of Class I. of Strong Purgatives (p. 214), as it is:—

"The chief of the 'Open' Group . . . A mixed purgative, with well-marked antacid reactions

"three times as rich in antacids . . . contains nearly three times as much Chloride of Sodium

"not so unpleasant to take . . . and is free from organic impurity."

Great weight is attached to the modifying effects of the Antacids and Chloride of Sodium, as—

"These two Salts are admirably suited to reinforce the Sulphates, and the Mineral Waters thus constituted are remarkable for their efficacy as well as for their mildness."

I shall be glad to forward you a supply of circulars, descriptive pamphlets, and copies of testimonials, show-cards, &c., free of charge, on application.

I remain, Sir, yours obediently,

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Special attention is devoted in our laboratories to the manufacture of these, and only pure ETHYLIC ALCOHOL is used. We can offer the following on very favourable terms:—

Apricot	Damson	Greengage	Pear	Prune	Red Currant
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SOLUBLE ESSENCE OF JAMAICA GINGER (EVANS').

Made by a special process of our own from Finest Jamaica Ginger.

SOLUBLE ESSENCE OF GINGER ALE (EVANS').

A compound concentrated essence for the production of Ginger Ale of fine Bouquet.

FROTHINE

For producing an instantaneous and permanent Creamy Froth upon all kinds of Beverages.

Directions—To Ale, Beer, Porter, Cider, Ginger Ale, &c., add one ounce of the FROTHINE to every ten gallons. To Syrups, for Lemonade and other Aerated Waters, add half an ounce to each gallon.

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HONOURABLE MENTION,
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HAY'S SOLUBLE ESSENCE OF JAMAICA GINGER

(Guaranteed Pure and Free from Capsicum).

Trade Price, 5s. per lb.; 12 lbs. and upwards, 4s. 6d.

Highly adapted for the manufacture of *Transparent Aerated Waters*, and for all *Dietetic, Medicinal, and Pharmaceutical purposes.*
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Made from Hay's Ginger Champagne Essence.

"The FINE AROMA OF GINGER which Mr. Hay has caught with remarkable success is an excellent SUBSTITUTE FOR ALCOHOL, as it gives what old port wine-drinkers used to call 'BODY,' and to many people, besides professed tea-totalers, an occasional change at least from the ROYAL FRENCH BEVERAGE to its less costly, but equally sparkling and MORE REFRESHING ENGLISH RIVAL, is a welcome treat." —*The Chemist and Druggist.*

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"An excellent effervescent drink." —*The Lancet.*

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The aroma is fine, the flavour delicate, and the pungency admirable, and we should be glad to see the Essence introduced into this country.

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"It pours out with as fine a 'head' as any glass of ale, and possesses all the fine aromatic flavour of the pure ginger. It is a beverage which is sure to win favour wherever introduced." —*The Chemist and Druggist.*

THE COMPOUND FORTIFIED ESSENCE Specially adapted for the Manufacture of the FINEST GINGER ALE.

This Essence, which is an addition of Vanilla, Lemon, and other flavours to the above, is strongly recommended for the manufacture of the finest Ginger Beer and Ginger Ale. It imparts, with the exquisite Ginger Aroma of the above-mentioned Essence, a peculiarly fine fruity flavour combined with the fullest amount of fragrance and pungency.

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This Essence is a combination of the Finest Flavours, and imparts with the Ginger, a most exquisite Aroma.

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This Essence is a complete Bouquet of the Finest Ginger, Lemon, and other flavours in a highly concentrated state. Ginger Beer and Ginger Ale made with this Essence will possess an amount of Aroma, Flavour, and Quality that have hitherto been without precedent, and that will be sure to command a large sale.

THE COST IN MANUFACTURE IS ABOUT ONE FARTHING PER DOZEN BOTTLES.

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SUPPLIES PUNGENCY, AROMA, COLOURING, AND FLAVOURING.

This Extract is strongly recommended for the manufacture of Ginger Ale, to which it imparts an unusually Fine Flavour and Great Brilliance, at a cost of a little under 1d. per dozen bottles.

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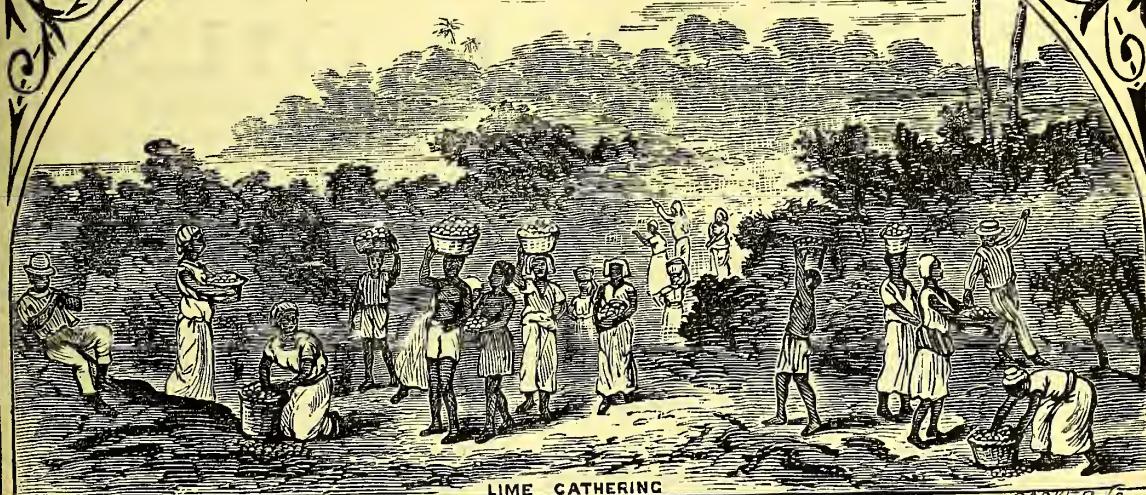
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W. HAY, Manufacturing Chemist, BEVERLEY ROAD, HULL.

Agents—Messrs. HEARON, SQUIRE & FRANCIS, Wholesale Druggists,
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LARGO MUNIZIONE, MESSINA, SICILY,

MANUFACTURERS, ESTABLISHED ON THE VERY GROWTH PLACE, FOR THE FINEST

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'Of Lemon, Bergamot, Sweet and Bitter Orange. Recently Awarded at the Exhibitions of

CALTANISSETTA, 1879—A Gold Medal and 200 Liras for Invention of Machinery to the use of their Manufactory, and Silver Medal for Excellence of Produce.

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A first trial order is quite sufficient to remain convinced of the Excellence of our Essences.

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MESSRS. CLAUDE RAYNAUD & CO. (Grasse) beg to inform purchasers of the following prices for their new Rose Water and Orange Flower Water:—

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Carboys of 24 litres, triple	32 fcs or £1 5 7
" 24 "	quadruple	... 36 " 1 8 9
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Carboys of 24 litres, triple	34 fcs or £1 7 2
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FREDERICKSHALL (6 Cases, 6d. per Case less, 2s/- Case, 30 bts.; 39/- Case, 60 ½-bts.

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"Carriage paid." Hamper free.

5 per cent. discount if 20 Hampers.

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CARLSBAD ALTS, 1/- Bots., 20/- per doz.;

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FROM FINEST LAKES IN
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Professor Frankland's report with analysis:—
"The ice is exceedingly pure, and contains less foreign matter than any water with which I am acquainted in this country."

Original Blocks

(2 to 3 cwt. each) 2s. 0d. per cwt.

1 cwt. to 2 cwt. .. 2s. 6d. per cwt.

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Packing free. Utmost promptitude in despatch.

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W. J. BUSH & CO.,
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ESSENTIAL OILS AND FRUIT ESSENCES,
SOLUBLE ESSENCES FOR AÉRATED WATER
AND CORDIAL MANUFACTURERS,

Extra Super Lemon, which is double the strength of ordinary commercial qualities.

W. J. B. & CO. caution the Trade against the so-called soluble Essences now so frequently offered for sale, which are nothing more than mere tinctures, and, although offered at lower prices, cost five or six times as much in use, whilst imparting a strong medicated flavour.

The importance of our invention of Soluble Essences is clearly shown by the numerous imitators and copyers that have sprung up, and we must inform the TRADE that ours are the only GENUINE ORIGINAL SOLUBLE ESSENCES.

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PROTECTED BY ROYAL LETTERS PATENT,

For producing a head of Creamy Richness upon all kinds of Syrups, Aerated Waters, Beers, Ales, Cider, Champagne, &c., 2s. 6d. per pound.

W. J. BUSH & CO. regret having to Caution the Trade against spurious imitations of this article, most of which being mere rubbish.

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ENGLISH DRAWN ESSENTIAL OILS.

OL. AMYGD. ESSENT. ANG.	OL. CUBEBAE ANG.
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1885.

SEVENTEENTH YEAR OF PUBLICATION.

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A shorter and less finished treatise on this subject appeared in the Diary for 1880, and caused that issue to be rapidly bought up. We have had many hundreds of applications for copies of that work since it has been out of print, and we have therefore decided to give in the new Diary a treatise on similar lines, but of about double the extent.

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Subscribers will be supplied first. A copy of the Diary will be presented free to every Subscriber to "The Chemist and Druggist," and to Subscribers the price for extra copies will be 2s. 6d. ; to Non-subscribers 3s. 6d. Early application is important, as a reprint will be impossible.

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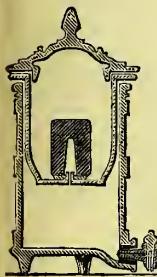
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DOULTON'S MANGANOUS CARBON FILTERS (Dr. Bernays's Patent).

The Combination prepared under this Patent gives to the Charcoal its highest value as a

FILTERING MEDIUM.

The Filter is made in four movable parts—the body, the lining, the Manganous Carbon block, and the cover. By this means every portion of the Filter may be

KEPT PERFECTLY CLEAN,

and the Manganous Carbon block may be changed as often as necessary WITHOUT PARTING WITH THE FILTER.

DOULTON & CO. also manufacture Bondoir or Table Filters, Pocket and Syphon Filters for Tourists' use, Manganous Carbon Self-Acting Cistern Filters, Refrigerator Filters, High Pressure Filters for manufacturing purposes, &c. May be had of all Dealers.—DOULTON & CO., Lambeth, London, S.E.

DOULTON'S IMPROVED GRANULAR CHARCOAL FILTER.

In addition to the bed of Granular prepared Charcoal, these Filters are fitted with a movable block of MANGANOUS CARBON in place of sponge. This arrangement, whilst acting as a screen for suspended matters, gives a double action to the power of the FILTERING MEDIA.



Any Description of Filter Refitted at Moderate Charge.

MAIGNEN'S PATENT "FILTRE RAPIDE"

GOLD MEDAL AND TWO DIPLOMAS OF HONOUR INTERNATIONAL FISHERIES EXHIBITION.



The filtering medium is easily removed, and a new charge put in its place at a trifling expense.

For Cottage, House, Hall, Workshop, Laboratory, and Office.

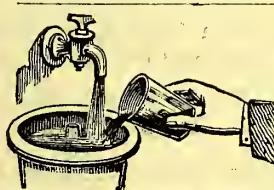


Fig. 1. "Bijou D."

Fig. 4. Charging the filter.

PRICES (in London, Package and Carriage extra).

"BIJOU D"—White Stoneware (black decoration),

No. of Filter.	Contents.	Filtering per hour.	Price.
"Bijou" No. 1D*	1 gallon	1 gallon	£1 5 0
" No. 2D"	2 "	2 "	2 0 0
" No. 3D"	3 "	3 "	3 0 0

* "Bijou No 1D," with hand-painted design, crystal stoneware, from £2 10s.



Fig. 3.

GUARANTEED TO REMOVE ALL THE GERMS OF DISEASE FROM WATER.

The ONLY Filter recommended by the Sanitary Institute of Great Britain, and the National Health Society.

For Cottage, House, Hall, Workshop, Laboratory, and Office.

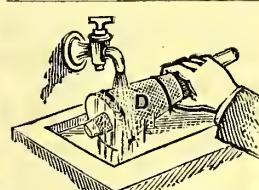


Fig. 5. Cleansing the filtering frame. Fig. 2. "Cottage."
PRICES (in London, Package and Carriage extra).

"COTTAGE"—Brown Stoneware.

No. of Filter.	Contents.	Filtering per hour.	Price.
" Cottage" No. 1	1 gallon	1 gallon	£0 15 0
" No. 2"	2 "	2 "	1 5 0
" No. 3"	3 "	3 "	1 15 0
" No. 4"	6 "	4 "	3 0 0

Particulars of Larger Filters, suitable for attaching to Cisterns and for Waterworks, on application to

P. A. MAIGNEN, Patentee, 22 & 23 GREAT TOWER ST., LONDON, E.C.

Sole Contractor to the International Health Exhibition, Author of "Water, Preventable Disease, and Filtration."

SILICATED CARBON PATENT MOVABLE-BLOCK FILTERS.

These Filters are constructed on Scientific principles, and can be renewed or repaired by the user without returning to the maker. They possess all the advantages of those with fixed filtering mediems, while the simple removal of the Silicated Carbon Block leaves the *whole* of the interior of the Filter open for inspection and cleansing. The working parts are stoneware, and corrosion is impossible.

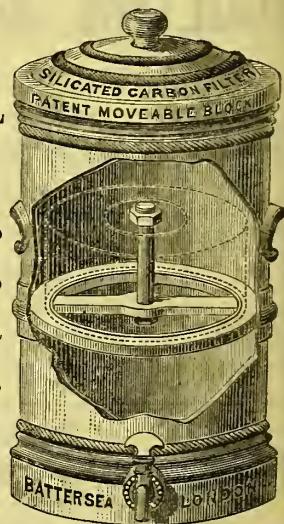


(Section.)

NO LOOSE PAN OR INNER VESSEL
TO CAUSE BREAKAGE.

The block being non-porous on the top and edges, an *upward* direction is given to the water, which thus passes through a greater thickness of the Silicated Carbon,

as shown by the arrows in drawing.



(Elevation with Block removed.)

The Silicated Carbon Block can be instantly removed, leaving the whole of the interior of the Filter *open* for inspection and cleansing.

To Cleanse the block, plunge it into boiling water, and well scrub it with a hard brush.

Extra blocks can be supplied with each Filter. All parts being interchangeable can be replaced in case of accidents.

This Patent can be adapted to all patterns manufactured by the SILICATED CARBON FILTER CO. without increased charge. In ordering please state "with patent movable block."

Domestic Filters (as above), in Cream-coloured Stoneware, with Plated Taps and Patent Movable Blocks:-

No. 27. O. $\frac{1}{2}$ gal. 10/- each. D. 6 gals. 42/- each.
 A. 1 " 14/- " E. 8 " 52/- "
 B. 2 " 21/- " F. 12 " 70/- "
 C. 4 " 32/- "

Dining Room Filters, in Marbled China with Plated Taps and Patent Movable Blocks:-

No. 22. A. 2 gals. 35/- each.
 B. 5 " 80/- "

Refrigerative Terra Cotta do., do.:—
 No. 25. 2 gals. 31/- each.

All makes of Filters can be refitted on this principle, 1 gal. 8/-, 2 gals. 10/-, 4 gals. 12/- each Larger sizes in proportion.

SILICATED CARBON FILTER COMPANY.

WORKS : BATTERSEA, LONDON.

LEUBE-ROSENTHAL'S IMPROVED MEAT SOLUTION.

Prepared by R. STUCTZ, Chemist, Successor to Dr. MIRUS, Jena, Germany.

This carefully prepared Meat Solution contains the real stimulating and nourishing constituents of the best quality of beef, freed of fat and sinews. It is exceedingly appetising, and easily digested even by the weakest stomach. It can be taken either entire or diluted with water. It is totally devoid of that obnoxious, nauseous taste so common to most of the meat preparations. It will keep good in hermetically closed tins for any length of time.

Retail Price per Tin, containing $\frac{1}{2}$ lb., 2/-; Wholesale, per dozen, 17/- net.

Wholesale Depôt: H. POTHS & CO., 4 Sugar Loaf Court, Leadenhall Street, LONDON, E.C.

KREOCHYLE BARFF AND WIRES LIQUID MEAT.

FOOD AND STIMULANT FOR INVALIDS AND INFANTS.

To be obtained of all Wholesale Chemists, and

Sole Manufacturers and Patentees: THE KREOCHYLE COMPANY, BIRKBECK ROAD, LEYTONSTONE, E.

Prices—Retail, 5s. per pint; 2s. 9d. per half pint; 1s. 6d. per quarter pint.

SPECIAL NOTICE & CAUTION.

BRAND & CO.

The Original Manufacturers of Essence of Beef (green label under wrapper), and other Specialities for Invalids, have

NOT REMOVED

From their SOLE ADDRESS, No. 11
LITTLE STANHOPE STREET, MAYFAIR, W., and caution the trade to

BEWARE of IMITATIONS.



HARVEY'S SAUCE

For FISH,
STEAKS,
GAME,
&c.

CAUTION.

Elizabeth Lazenby

Each Bottle
of this celebrated
Sauce, prepared from
the Original Recipe, bears
the well-known Label, signed—

This Label is protected by PERPETUAL INJUNCTION in Chancery of the 9th July, 1853, and without it
none can be GENUINE.

Prepared only by E. LAZENBY & SON, LONDON.

And sold Retail by Grocers, Oilmens, Italian Warehousemen, &c., throughout the Kingdom.

ORANGE-QUININE TONIC-WINE.

As originally introduced by us, containing 1 grain of quinine to the ounce.

To meet the requirements of the trade, we have reduced the prices as below. The size of the bottles and the quality are as hitherto supplied:

In bottles 6 to gallon, to retail at 2s. each, at 19s. per doz. In small bottles, to retail at 1s each, at 9s. per doz.

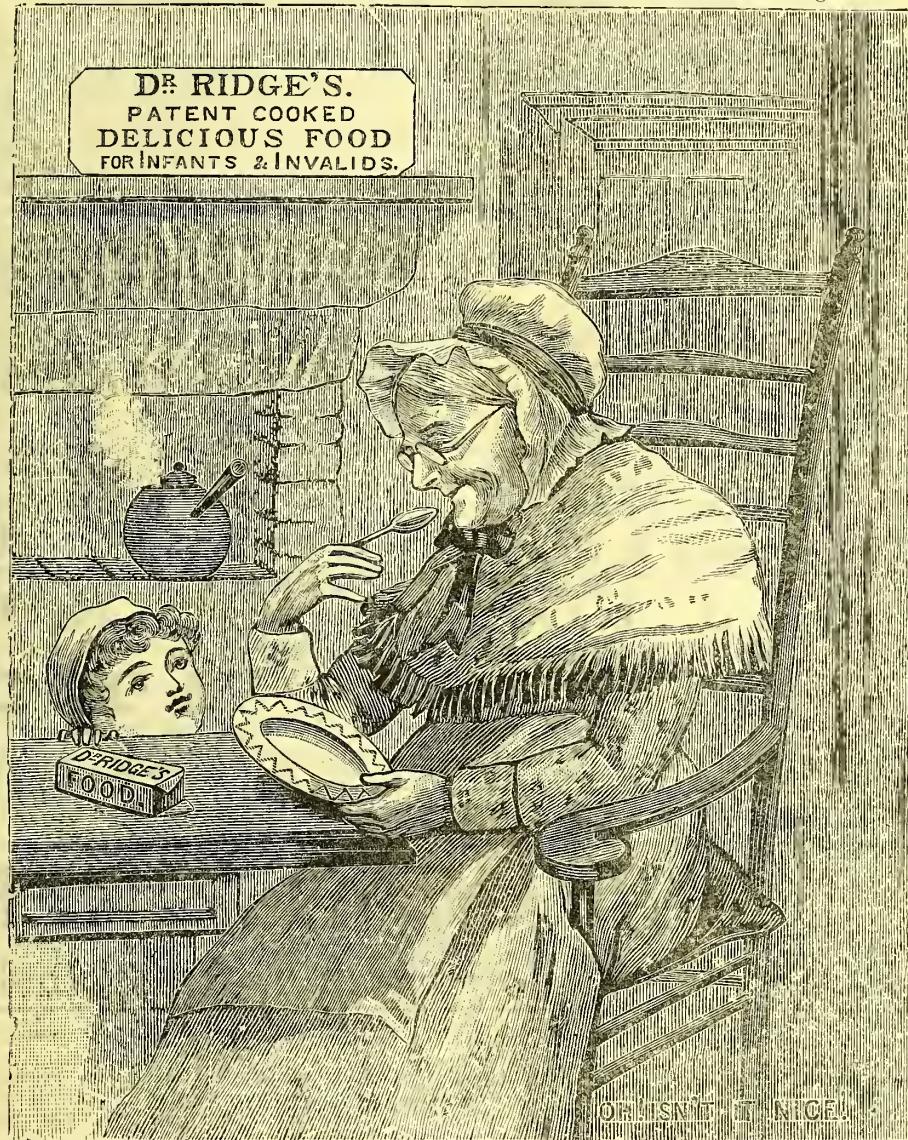
Less 5 per cent. discount. Carriage paid to any part of England on quantities of 3 dozen large or 6 dozen small bottles.

HIRST, BROOKE & HIRST, LEEDS.

"THE IMPORTANCE OF FARINACEOUS FOOD SUBSTANCES CANNOT BE OVERSTATED."

The staff of life as we receive it from the baker's hands may be in a very good and easily digested form for the healthy and strong; but custom has decreed that we must have our bread as white as can possibly be made. We do not inquire how such a result is brought about, and many, no doubt, do not even know that pure white is not the natural colour of wheat ground into flour. The ordinary form of farinaceous food does not agree with every one, and we have all sorts of bread made and sent out, as cottage, household, home-made, digestive, whole-meal bread, brown bread, &c., the only difference discoverable, save between the white and the brown, being in the shape of the loaves. Even these distinctions failed to be satisfactory to all persons, and specially-prepared

"The impetus thus given to the trade in what was supposed to be specially-prepared farinaceous food was not, however, stopped by this exposure, and preparations of meal and flour from beans, peas, and cereals of every description became popular. But the necessity of a farinaceous food which should have a maximum of nourishment with a minimum of bulk, and which could be immediately prepared and partaken of by persons of weak digestion, infants, and invalids, was still felt, and to provide for such a want among his own patients, the well-known Dr. Ridge turned his attention to wheat. The knowledge that this cereal contains in a greater degree all the constituents for keeping the human body in health and strength was the reason for choosing before any other this particular grain. We have not space here to detail the rapid popularity which this famous food obtained. Nor can we particularise on the most interesting processes through which the food passes at



OH! ISN'T IT NICE!

meals, about 1845, began to attract considerable attention in Paris and elsewhere, as being the very best diet for infants and young children. These articles were advertised as a certain cure for dyspepsia, constipation, &c. With the substance itself there was no fault to be found, and some of them met with considerable success. The only objection was the mystery in which they were shrouded; but this was dispelled by an edict of the French Government, which caused a commission of inquiry to be made into all secret remedies and nostrums. Chevalier, one of the professors of the Ecole de Pharmacie, analysed two of the most noted articles. One was found to be nothing but the pure meal of the lentil (*Ervum lens*), the other ordinary treacle, such as is sold in grocers' shops—both excellent in their way, but quite out of the reach of any but the wealthy at the prices at which they were sold,

the present manufactory; but our readers may form some idea of the enormous sale of Dr. Ridge's Food when we inform them that at the present time upwards of 4,000 tins and packets are consumed daily, and the sale is still rapidly increasing. Of all known subjects of alimentation milk alone is acknowledged to contain every element useful for the support of vigorous life; but pure milk cannot always be obtained, and when it is procured is invariably dear; therefore it became essential to find a cheap, handy, and health-giving substitute that could be used with equal efficiency either with or without milk. And, judging by the great success which has attended the efforts of Dr. Ridge, this has been most satisfactorily accomplished by the production of Dr. Ridge's Patent (Cooked) Food."—*Christian World*.

THE GENUINE PREPARATION OF “SWEET” ESSENCE OF RENNET.

McMaster, Hodgson & Co., Dublin,
ORIGINAL MANUFACTURERS AND PROPRIETORS.

THE FOLLOWING IS A CERTIFIED COPY OF REGISTRATION, 1870:—

Time of making the Entry.	Title of Book.	Name of Publisher, and Place of Publication.	Name and Place of Abode of the Proprietor of the Copyright.	Date of First Publication.
June 30, 1870.	WARREN'S SWEET ESSENCE OF RENNET, for making Curds and Whey—Label.	M'MASTER, HODGSON & Co., 121 & 122 Capel Street, Dublin.	M'MASTER, HODGSON & Co., 121 & 122 Capel Street, Dublin.	June 16, 1870.

I hereby certify that the above written is a true Copy of an Entry in the Book of Registry of Copyrights and Assignments kept at the Hall of the STATIONERS' COMPANY, pursuant to Act of Parliament, 5 and 6 Vict., c. 45.

Witness my hand, this 15th day of June, 1875.

(Signed) JOS. GREENHILL,

Registering Officer appointed by the Stationers' Company.

The recommendations of this Essence are the entire absence of Salt and Mineral Acids (which are highly objectionable), and is one of the most unique and elegant preparations yet introduced for producing curds and whey; rather sweet in taste, and warranted to remain unimpaired in any climate for any length of time.

As there are numerous counterfeits, be careful to order McMaster, Hodgson & Co.'s Genuine "Sweet" Essence of Rennet.

McMASTER, HODGSON & CO.'S

REOWNED “IMPROVED” Fluid Extract of ANNATTO,

Is guaranteed to be prepared from the pure colouring ingredients of the Annatto plant. It is perfectly soluble, always producing the same uniformity of colour; does not FADE, nor FLAVOUR Butter or Cheese.

It has been Awarded FIRST PRIZE at the National Agricultural Show, Victoria, Melbourne.

Messrs. W. CLARK & SON, Bristol, write:—“We have introduced your improved Annatto to many of our large Dairies in the Cheddar District, and we are pleased to say it has given great satisfaction.”

LONDON AGENTS:—Messrs. Crosse & Blackwell, Edwards & Son, Hovenden & Son, Lynch & Co., Barclay & Son.

LIVERPOOL AGENTS:—Messrs. Evans, Sons & Co., and Ayrton & Saunders.

McMASTER, HODGSON & CO., 121 & 122 CAPEL STREET, DUBLIN.



R. J. FULLWOOD & CO.,
The Original Inventors of the Prime, Rich, Golden-colour Cake and Fluid Extract of

A N N A T T O.

TO BE HAD GENUINE ONLY FROM THE STEAM ANNATTO WORKS,

31 BEVENDEN STREET (late 24 Somerset Place), HOXTON, LONDON.—Established 1785.

KETCHUP MANUFACTURERS.

FARROW & CO., Holbeach, Lincolnshire.

THE
CLARENCE
TRADE MARK.
SAUCE



Is most useful and economical to Hotel Keepers, Clubs, Restaurants, and the General Public.

It is indispensable with all kinds of made dishes, Soups, Gravies, Cold Meats, Salads, Cheese, &c., and its application to a Chop or Steak makes the repast a perfect luxury. With Fish it finds no rival. It is a perfect antiseptic and dietetic, and will be found beneficial to those suffering from want of appetite or weak digestion.

The Clarence Sauce differs from others in one grand feature, no animal or deleterious matter being used in its production. Its ingredients are composed of the finest vegetable productions selected from all parts of the world.

The celebrated Chef Francatelli averred that he never sent a made dish to table without this Sauce. SOLE PROPRIETORS:

CLARENCE & CO.,
10 Dean Street, Holborn, LONDON, ENGLAND.
The Sauce is made in two strengths, “HOT” and “MILD.”

Price 1s. per Small Bottle and 2s. per Large Bottle.

WHLESALE TERMS AND SAMPLES ON APPLICATION. SPECIAL RATES TO SHIPPERS.

SEVEN PRIZE MEDALS AWARDED.

GOODALL'S HOUSEHOLD SPECIALITIES. YORKSHIRE RELISH.

THE MOST DELICIOUS SAUCE IN THE WORLD.

This cheap and excellent Sauce makes the plainest viands palatable, and the daintiest dishes more delicious. To Chops and Steaks, Fish, &c., it is incomparable. Sold by Grocers, Oilmen, Chemists, &c., in Bottles, 6d., 1s., and 2s. each.

CAUTION.—On each Yorkshire Relish Label is a Willow Pattern Plate, and name, GOODALL, BACKHOUSE & CO. No other is genuine.

Goodall's Baking Powder

THE BEST IN THE WORLD.

Makes delicious Puddings without Eggs, Pastry without Butter, and beautiful light Bread without Yeast. In 1d. Packets; 6d., 1s., 2s., and 5s. Tins.

Goodall's Quinine Wine

The best, cheapest, and most agreeable tonic yet introduced. The best remedy known for Indigestion, Loss of Appetite, General Debility, &c. Restores delicate individuals to health and vigour. In Bottles, 1s. 1½d. and 2s. 3d. each.

Goodall's Custard Powder

For making delicious Custards without Eggs, in less time and at half the price. Unparalleled for the purposes intended; will give the utmost satisfaction if the instructions given are implicitly followed. Sold in Boxes 6d. and 1s. each.

Goodall's Ginger Beer Powder

Makes Three Gallons of the Best Ginger Beer in the World for 3d.

Is a delicious and invigorating beverage, possessing valuable medicinal properties. It is cooling in its nature, and a most wholesome beverage for both winter and summer. Sold in Packets, 3d. and 6d. each.

Goodall's Blanc Mange Powder

Is acknowledged by all to be the most convenient and economical preparation ever introduced, as, by its use, a most Rich and Delicious Blancmange may be produced in a few minutes at a trifling cost, and may be had of various flavours, i.e., Raspberry, Strawberry, Lemon, Almond, and Vanilla. Sold in Packets, 6d. and 1s. each.

Goodall's Egg Powder

Acknowledged to be the only real substitute for eggs yet discovered. Its action on Cakes, Puddings, &c., &c., resembles that of the egg in every particular, enriching them in colour and flavour, rendering them most wholesome and nutritious. One penny packet will go as far as four eggs: and one sixpenny tin as far as twenty-eight. In 1d. Packets; 6d. and 1s. Tins.

SOLE MANUFACTURERS—

GOODALL, BACKHOUSE & CO., White Horse Street, Leeds.

A Monthly Price List of Druggists' Sundries, Patent Medicines, &c. can be had post free on application.

The following well-known
MEDICINES, &c., OF APPROVED EFFICACY
ARE PREPARED FROM
PRESCRIPTIONS OF EMINENT PHYSICIANS
BY

REECE & COMPANY

MEDICAL HALL, PICCADILLY, LONDON,

From whom they may be obtained direct or through any of the Wholesale Houses.

PRICES AND TERMS ON APPLICATION.

DR. REECE'S SATURATED TINCTURE BUCHU,
For Excessive Irritation of the Bladder, Prostrate Gland, Urethra,
Rectum, &c., &c.
Retail 2/9, 6/-, and 10/- per Bottle.

DR. ROBINSON'S TINCTURE CORNEL,
For Local or General Debility from residing in Tropical Climates,
indulgences in either Drinking or Eating, &c.
Retail 2/9, 6/-, and 10/- per Bottle.

DR. SIGMOND'S TINCTURE CHIRAYITA,
For Indigestion arising from Nervous Excitement of the Stomach,
Obstruction of the Liver, &c., &c.
Retail 2/9, 6/-, and 10/- per Bottle.

DR. WILLIAM'S ALKALINE WINE COLCHICUM,
For Gout and Rheumatism.
Retail 2/9, 6/-, and 10/- per Bottle.

DR. REECE'S ALKALINE ESSENCE OF
GINGER AND CAMOMILE,
For Indigestion from Debility attended with Flatulence and Spasms.
Retail 2/9 per Bottle.

DR. DUNCAN'S LETTUCE LOZENGES,
For Catarrh, Cough, Consumption, &c.
Retail 1/1½ and 2/3 per Box.

DR. ANDREW'S ETHEREAL TINCTURE LOBELIA,
For Spasmodic Asthma.
Retail 3/- and 5/6 per Bottle.

REECE'S COMPOUND ASARABACCA SNUFF,
For Nervous Headache, Weakness of Sight, Hay Fever, Catarrh, &c.
Retail 2/6 per Bottle.

REECE'S ARTIFICIAL HARROGATE SALT,
For Inflammatory Irritations, Piles, Constitutional Costiveness, &c., &c.
Retail 2/- and 3/6 per Bottle.

DR. DICK'S BENGAL ANTIBILIUS PILLS,
For obstinate or Constitutional Constipation, Sluggishness of the Liver,
loaded state of the Viscera, &c., &c.
Retail 2/9 per Box.

DR. SCUDAMORE'S CAJEPUT OPODELDOC,
For Rheumatic or deep-seated Pains, Enlarged or Stiff Joints, Chilblains, &c.
Retail 2/6. 5/-, and 10/- per Bottle.

PROF. HERTZ' LOTION OF THE MALIC ACID,
For Removing and Preventing Accumulation of Tartar on the Teeth.
Retail 2/- per Bottle.

WRIGHT'S LINIMENT FOR THE EAR,
For Deafness occasioned by Cold, Hardened Wax, &c., &c.
2/- per Bottle.

REECE'S PREPARED CHARCOAL OF THE
ARECA OR BETEL NUT,
For Preserving and Cleaning the Teeth.
Retail 2/6 per Box.

REECE'S PERIODICAL ABSORBENT PADS
Are without exception the most convenient, cleanest, and cheapest
articles yet introduced for the Comfort of Ladies.
Whilst Travelling Indispensable.
Belt and Support, in Boxes, 2/6 each.
Absorbent Antiseptic Pads, in Boxes, 2/- per dozen.

DR. REECE'S "MEDICAL GUIDE TO HEALTH."
Simplest and best work of the kind.

Published at 168 Piccadilly, London. Price 5/- each

CLARK'S COFFEE EXTRACT.

The Best and Cheapest. No Waste, no Chicory. Saving time and money.
MADE IN AN INSTANT.

CLARK'S COFFEE AND CHICORY EXTRACT.

A marvel of quality and cheapness. No waste. Made in an instant.

CLARK'S EXTRACTS are in bottles to retail at 6d., 1s., and 2s., and should be sold by all Chemists, &c., throughout the world.

Clark's Extracts are made on a new and scientific principle, whereby the aroma of fresh coffee is retained unimpaired. They will keep in any climate, warm or cold, are very portable and highly concentrated, one teaspoonful of Extract making a cup of good coffee. Clark's Extracts are acknowledged by eminent and practicable judges the best in the market.

Wholesale of the usual Houses and of the Manufacturers,

E. CLARK & CO.,

OPTIMUS COFFEE WORKS, QUEEN'S ROAD, BATTERSEA, LONDON, S.W.

CHEMISTS' TEA AGENCY.

WALKER & DALRYMPLE'S

BROKEN-LEAF TEA, 1s. 8d. per lb.

A MONEY SAVING TEA. ABSOLUTELY PURE.

The small leaf from some of the finest India and China Teas. Produces a Tea in the cup, stronger, richer, and cheaper than most whole-leaf Teas. Agents appointed, where unrepresented, throughout the United Kingdom.

WALKER & DALRYMPLE'S

INTERMEDIATE TEA, 2s. per lb.

BEST at the PRICE EVER SOLD. Great strength and a most useful Tea where there is a large consumption. Recommended to all who wish to SAVE in their Tea. Agents appointed, where unrepresented, throughout the United Kingdom.

WALKER & DALRYMPLE'S TEAS.—

AGENTS APPOINTED, where unrepresented, throughout the United Kingdom.

Prospectus and Samples Free on Application.

Warehouses, 154, 155, 159 and 160 WHITECHAPEL ROAD, and BRADY STREET, LONDON.

P.O.O. payable at head office. Bankers, the National Provincial Bank England.

KANGRA VALLEY

Indian Tea Growers' Association,
7 NEW COVENTRY STREET,
LEICESTER SQUARE, W.

THE distinctive feature of the Business of this Association of Planters is, that the Tea is delivered to consumers in the original One lb. tin-foil lined parcels in which it is packed on the Plantations.

Chemist and Druggist.—"A new agency for tea is offered to chemists and druggists by the 'Kangra Valley Indian Tea Growers' Association," and the fact that the well-known firm of Barclay & Sons are assisting this association in introducing their tea to the public through chemists is a guarantee that the business is of a more serious character than some other of the packet-tea agencies have proved. The Kangra tea plantations lie on the slopes of the North-West Himalayas, and this association appear to take great care in the selection of their leaves, and certainly offer a tea of fine quality. Their teas are packed in pound packets at the plantations, and in that form are offered for sale here in three different qualities."

These Teas, retailing respectively at 4/-, 3/-, and 2/-, can be purchased in any quantity, either direct from the Store, 7 New Coventry Street, or from Messrs. Barclay & Sons, 35 Farringdon Street, Agents to the Association.

Special Terms granted to all Chemists and Druggists, to whom the Teas, on account of their absolute purity, are particularly recommended.

CONROY'S MALT COFFEE.

GOLD MEDAL AWARDED AT CALCUTTA EXHIBITION, MARCH, 1884.

Conroy's Malt Coffee has received the following Certificates amongst many others.

"Undoubtedly a nourishing and health producing article of diet."—Edward Davies, F.C.S., F.I.C., &c., Liverpool.

"Most beneficial in cases of atonic indigestion."—E. Adam, M.R.C.S., England.

"Genuine Coffee gives me indigestion. Your Malt Coffee is entirely free from this objection."—S. Whitaker, Waterfoot, near Manchester.

"Dyspeptics who could never take the ordinary coffee or date coffee can take the Malt Coffee, and with the most beneficial effects."—Dr. Lloyd, Bangor.

"I have frequently recommended your Malt Coffee in cases of weak digestion, invariably with satisfactory results."—W. Bell, Senior Surgeon to the Convalescent Institution, New Brighton.

"A most excellent combination."—A. W. Postans, F.C.S., London.

"Very palatable and marvellously easy of digestion."—Society, October 21, 1882.

"It can in many cases be readily taken when ordinary coffee disagrees."—British Medical Journal, July 29, 1882.

"Refreshing, and at the same time nutritious, spirit-infusing, yet absolutely non-infecting, palatable, and wholesome to an eminent degree."—The Colonies and India, 29th Sept., 1882.

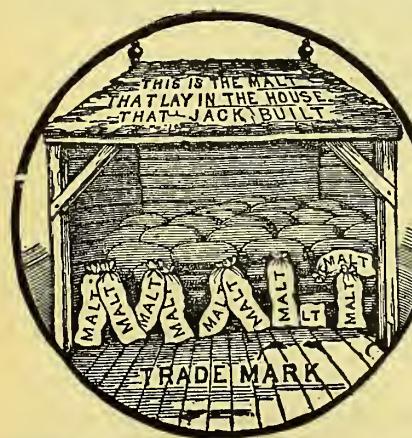
"Both pleasing to drink, and adds greatly to digestion."—The Anti-Adulteration Review, October, 1882.

"The combination ought, therefore, to improve the health of those who consume it."—Globe.

"Malt Coffee, the new temperance beverage, would seem to make the nearest approach to what is required. Pure malt is in its own way as beneficial as pure coffee, being especially strengthening and nutritious."—Morning Post.

IT IS MADE IN THE SAME WAY AS ORDINARY COFFEE.

Pamphlets containing Testimonials from Eminent Scientific, Medical, and other Gentlemen of the highest position, may be had Free for Gratuitous Distribution.



In cases of 56 lbs. each, put up in 1-lb., 1/2-lb., and 1/4-lb. tins. Each Tin is protected by an Excise Stamp under the Regulations of the new Inland Revenue Bill of August 3, 1882.

PREPARED ONLY AT THE

MALT COFFEE WORKS, 34 FLEET STREET, LIVERPOOL.
SOLE PROPRIETORS—

EVANS, SONS & CO., 56 Hanover Street, LIVERPOOL.
EVANS, LESCHER & WEBB, 60 Bartholomew Close, LONDON, E.C.
QUOTATIONS ON APPLICATION.

CASH PRICE
20s. for 12½ GALLONS.
CASKS FREE.

School of Cookery, Crystal Palace, S.E.
January, 1883.

MR. PETER TYRER,
SIR,—I have been using the "Borough" Ketchup, and am very pleased with it. Its flavour is excellent, both for all kinds of Savoury dishes and Soups; and I most certainly should advise every cook and house-keeper to use it, FOR I HAVE NEVER YET MET ITS EQUAL.

MARIAN, SMITHARD,
Lectress on Cookery.

MANUFACTORY—
70 LONG LANE, BOROUGH,
LONDON, S.E.

Scotch Agency—115 West Nile Street, Glasgow.

DO NOT THROW MONEY AWAY
BUT WRITE
FOR A
FREE SAMPLE OF

Tyrer's SILVER MEDAL
"BOROUGH" LONDON.
Ketchup

SENT FREE
TO ANY ADDRESS

SEVEN INJUNCTIONS have been granted during the past few months.

CAUTION! "YORKSHIRE RELISH."

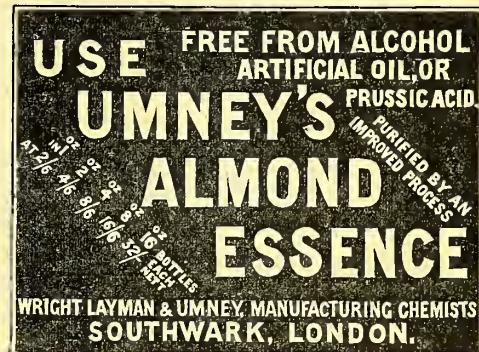
NOTICE IS HEREBY GIVEN that in several actions instituted by Messrs. GOODALL, BACKHOUSE & CO., of LEEDS, Injunctions have been recently granted by Judges of the Chancery Division of the High Court of Judicature, restraining several persons from using several Counterfeits of Messrs. GOODALL, BACKHOUSE & CO.'s Labels, and in particular against the use of the words "YORKSHIRE RELISH." The sole and exclusive right to the use of which words having been finally established by the above Firm, they will take immediate proceedings against parties manufacturing or offering for sale Sauce under the above title, not being of the manufacture of Messrs. GOODALL, BACKHOUSE & Co.

Information may be given to the undersigned,

J. SEYMOUR SALAMAN,
12 KING STREET, CHEAPSIDE, LONDON,
Solicitor to the Trade Mark Protection Society.

TO INVALIDS
USE
MOIR'S
SOUPS
IN 1-lb. and ½-lb. GLASSES.

OX-TAIL SOUP (Clear)
MOCK-TURTLE SOUP (Clear)
BEEF TEA,
CHICKEN BROTH.



MUSTARD.
FINCH, RICKMAN & CO.'S
Genuine Qualities

Are made from the finest mustard seeds only. Their compounds, as manufactured for upwards of a century, are guaranteed free from all ingredients imparting spurious heat, and are therefore equally suitable for both table and medical purposes.

6 BROKEN WHARF, UPPER THAMES STREET,
LONDON.

T. KERFOOT, MANUFACTURING PHARMACEUTICAL CHEMIST, MEDLOCK VALE WORKS, MANCHESTER.

Manufacturer, by Special Process, of every description of Superior Medicated Lozenges, Medicated Jujubes, Candies, and Boiled Sugars; also Granular Citrate of Magnesia, and all Granular Preparations.

J U J U B E S.

DELECTABLE,
VOICE,

MAGNUM BONUM,
GLYCERINE,

LICORICE,
ROSE,

MARSH MALLOW,
CHLORODYNE, &c.

Beautifully finished, delicious flavours, and non-adhesive.

In 2-lb. and 4-lb. Tins: 1/9 per lb. TINS FREE.

L O Z E N G E S

Of all the Pharmacopœia kept in Stock. Our list of these is too large to publish; but it embraces all the kinds known to Pharmacy. We offer buyers the advantage of Medicated Lozenges made and dried at very low temperature, and the medicinal activity of which can be guaranteed. Lozenges from private formulæ stamped with Chemist's Own Name, and cut to any desired shape.

C A N D I E S.

HOREHOUND AND HONEY CANDY,
in 6-lb. boxes,
LINSEED CANDY,
in 6-lb. boxes,
MALT CANDY,
in 4-lb. boxes,
10d. per lb.

These Candies are neatly
got up, with glass lids to
boxes, forming a neat case
for counter or window dis-
play. The two first-named
are protected by registra-
tion.

SUPERIOR
DIGESTIVE
CANDY,
1s. 3d. per lb.,
4-lb. bottles.

B O I L E D S U G A R S.

LIME FRUIT.
LEMON.
MIXED FRUIT.

VANILLA.
BLACK CURRANT.
PEPPERMINT.

RASPBERRY.
ROSE.
GREENGAGE.

MALT.
ANISEED.
BARLEY SUGAR.

JARGONELLE.
PINEAPPLE.
GINGER.

EVERTON.
HOREHOUND.
COUGH.

In 4-lb. bottles, 8d. per lb.

V E R M I F U G E S.

SWEET WORM CAKES OF FRUIT
AND SUGAR,
Suitably Medicated,
In 3-doz. and 6-doz. Tins, 8s. per Gross.

GINGERBREAD WORM CAKES,
8s. per Gross,
In 3-doz. and 6-doz. Tins.

ROUGH SUGAR WORM CAKES,
8s. per Gross,
In 3-doz. and 6-doz. Tins.

SWEET WORM CAKES are made either Pink or Yellow, and Name and Address will be stamped upon quantities of One Gross.
Each Cake is wrapped in separate wrapper and full directions for use. *Special Quotations for Quantities.*

C O M P R E S S E D C H L O R A T E O F P O T A S H P E A R L S.

3/6 per lb. Sixpenny Boxes of the above, 3/- per dozen.

Other Compressions can be quoted for. These Pearls have a large sale wherever introduced; they are made by very powerful machinery, and are the HARDEST COMPRESSIONS IN THE MARKET.

K E R F O O T ' S C I T R A T E O F M A G N E S I A .

Extra Quality, 1/6 per lb.; we label this "CITRATE OF MAGNESIA." No. 1, 1/1; No. 2, 1/- per lb.
Special Quotations for Large Quantities.

E F F E R V E S C I N G S A L I N E O F V E R Y H I G H Q U A L I T Y .

1s. 2d. per lb.

A large and long experience in the manufacture of Effervescent Preparations for all Climates enables us to prepare and send out this Saline in perfect condition, and to guarantee it to keep good for an indefinite time.

CITRATE OF MAGNESIA and SALINE Packed in Bottles of all sizes, Labels of which will be submitted on application.

T. KERFOOT, Medlock Vale Works, MANCHESTER.

KERFOOT'S GEELATINE LOZENGES

Are Unsurpassed for High Finish and Fine Flavour!
Retain their Lustre, & keep Sweet & Good in all Climates!

SPECIALLY PACKED FOR HOME AND EXPORT TRADE.
SHIPPIERS AND LARGE BUYERS ARE INVITED TO SEND FOR QUOTATIONS.

T. KERFOOT, Manufacturing Pharmaceutical Chemist,
MEDLOCK VALE WORKS. **MANCHESTER.**

FIRST CLASS MEDAL, NEW ZEALAND, 1882.

PHILLIPS & SONS'
DANDELION COFFEE.

Castle Square, SWANSEA; 34 Eastcheap, LONDON.

Note London Address, having no connection with a Retail Firm of same name. Established 1760.

FRY'S MALTED COCOA

(PATENTED).

A Combination of FRY'S Pure COCOA EXTRACT with
ALLEN & HANBURY'S CONCENTRATED EXTRACT OF MALT.

J. S. FRY & SONS, BRISTOL AND LONDON.



Manufactory:

BATH CITY BRASS FOUNDRY
AND IRONWORKS,
BECK STREET.

N. G. WILCOCKS,
BATH, SOMERSET,
ENGLAND.

ORPE'S COMPOUND PERFUME.

½-lb. Bottles, 6/6 each; 1-lb. ditto, 12/6 each.

This compound will be found superior to Bergamot or Lemon for scenting
Pomades, Cosmetics, or Oils. (½ oz. to 2 lb. Ol. Olive.)

A. F. FOSSE (T. M. ORPE), 329 Old Kent Rd., London, S.E.

Importer of French Pomades and Essences. Obtained through Messrs.
Maw, Son & Thompson, and all Wholesale Houses.

PARIS 1878—AWARD, THE ONLY GOLD MEDAL FOR PLUMBAGO CRUCIBLES.
THE SALAMANDER BRAND OBTAINED THE SOLE AWARD FOR CRUCIBLES AT FRANKFORT, 1881 (GOLD MEDAL).

THE MORGAN CRUCIBLE COMPANY

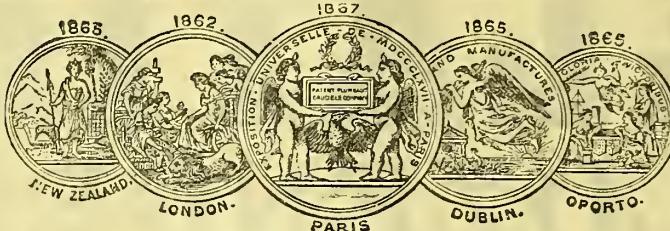
(THE PATENT PLUMBAGO CRUCIBLE COMPANY),
PHILADELPHIA CENTENNIAL EXHIBITION, 1876—MEDAL AWARDED.

Moscow Exhibition,
1872.

Gold Medal. SOLE Award
for Crucibles.

Amsterdam Exhi-
bition, 1869.

Highest Award for Crucibles.



Havre Exhibition,
1868.

ONLY First-Class Medal
(silver) awarded.

Paris Exhibition,
1867.

The only First-class Medals.
Silver Medals,
Classes 40 and 51.

BATTERSEA WORKS, LONDON, ENGLAND
(SOLE MANUFACTURERS OF MORGAN'S AND SALAMANDER CRUCIBLES).

SALAMANDER-CRUCIBLES,

Patented in Great Britain, Germany, France, Italy, United States, &c., &c.

ARE NOT AFFECTED BY MOISTURE OR FROST.

The only Plumbago Crucibles that require NO ANNEALING.

Each number contains about 2 lbs. English (thus, No. 25=50 lbs. capacity), and are so stamped.

No. 5... per doz.	£0 0 8	No. 5... per doz.	£0 15 0	No. 25... each	£0 6 3	No. 90... each	£1 2 6
4/0... "	0 1 1	6... "	0 18 0	30...	0 7 6	100...	1 5 0
3/0... "	0 1 4	8... "	1 4 0	35..."	0 8 9	120..."	1 10 0
2/0... "	0 2 0	10... "	1 10 0	40..."	0 10 0	150..."	1 17 6
0... "	0 2 6	12... "	1 16 0	45..."	0 11 3	200..."	2 10 0
1... "	0 3 0	14... "	2 2 0	50..."	0 12 6	250..."	3 2 6
2... "	0 6 0	16... "	2 8 0	60..."	0 15 0	300..."	3 15 0
3... "	0 9 0	18... "	2 14 0	70..."	0 17 6	400..."	5 0 0
4... "	0 12 0	20... "	3 0 0	80..."	1 0 0	500..."	6 3 0

SALAMANDER MUFFLES, to suit above Crucibles, 2d. per Number.



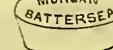
TRADE MARK.
Process Patented.



12-in. SALAMANDER COVERS, 1d. per No.



12-in. STIRRERS, 12s. per dozen.



STANDS, 1d. per No.



TRADE MARK.

FLUXING POTS.

IDENTICAL WITH THE FRENCH IN QUALITY, FORM, AND CAPACITY.

No.	Height, inches	Hauteur, milli.	Diameter, inches	Diameter, milli.	Per dozen Crucibles		COVERS TO FIT ALL SIZES.
0	2	.050	1 $\frac{1}{2}$	.030	£0 0 4		
1	2 $\frac{1}{2}$	.055	1 $\frac{1}{2}$	.034	0 0 6		
2	2 $\frac{1}{2}$	.060	1 $\frac{1}{2}$	.036	0 0 8		
3	2 $\frac{1}{2}$	.070	1 $\frac{1}{2}$	.042	0 0 10		
4	3 $\frac{1}{2}$	.080	1 $\frac{1}{2}$	.046	0 1 0		
5	3 $\frac{1}{2}$	.090	2	.050	0 1 2		
6	3 $\frac{1}{2}$	.100	2 $\frac{1}{2}$	.055	0 1 4		
7	4 $\frac{1}{2}$	.110	2 $\frac{1}{2}$	.062	0 1 6		
8	4 $\frac{1}{2}$	.120	2 $\frac{1}{2}$	.068	0 1 10		
9	5 $\frac{1}{2}$	.135	2 $\frac{1}{2}$	.074	0 2 4		
10	5 $\frac{1}{2}$	.150	3 $\frac{1}{2}$	.080	0 2 9		
12	7 $\frac{1}{2}$	.185	3 $\frac{1}{2}$	.095	0 4 9		



All sizes upwards can be supplied, but BATTERSEA ROUND are found in use to be superior.

AACHEN, July 23, 1880.

For several years past I have used Fire Clay Assay Furnaces, Muffles, and Crucibles made by the Patent Plumbago Crucible Co., Battersea Works, London, S.W., and am so thoroughly satisfied with them that I strongly recommend this manufacture to all laboratories, refiners, and smelting works.

(Signed) PROF. DR. DÜRRE,
Der Königl. Rheinisch Westfälischen Polytechnischen Hochschule.

THE MINT OF THE UNITED STATES AT SAN FRANCISCO,
OFFICE OF THE ASSAYER,

SAFETY, CAL., April 19, 1877.

SIRS.—I have tested and used the Assay Crucibles and Annealing Cups, and can with assurance recommend their superior quality and durability.

Respectfully yours, &c.,
O. D. MUNSON, Assayer.

POROUS BATTERY CELLS.

FLAT, WITH EARS.

OUTSIDE MEASUREMENT. PRICES PER DOZEN.

Mark C ROUND. All sizes made to order.

Diameter.	3	4	4 $\frac{1}{2}$	5	5 $\frac{1}{2}$	6	6 $\frac{1}{2}$	7	7 $\frac{1}{2}$	8	9	10	12
1 in.	1/2	—	—	—	—	—	—	—	—	—	—	—	—
1 $\frac{1}{2}$ in.	1/6	—	—	—	—	—	—	—	—	—	—	—	—
1 $\frac{1}{2}$ in.	1/6	2/1	2/1	2/1	2/1	3/1	3/1	3/1	3/1	4/1	4/1	4/1	5/1
2 in.	—	2/6	3/1	3/1	3/1	3/1	3/1	3/1	3/1	4/1	4/1	4/1	5/1
2 $\frac{1}{2}$ in.	—	—	3/1	3/1	3/1	3/1	3/1	3/1	3/1	4/1	4/1	4/1	5/1
2 $\frac{1}{2}$ in.	—	—	3/1	3/1	3/1	3/1	3/1	3/1	3/1	4/1	4/1	4/1	5/1
3 in.	—	—	3/1	3/1	3/1	3/1	3/1	3/1	3/1	4/1	4/1	4/1	5/1
3 $\frac{1}{2}$ in.	—	—	3/1	3/1	3/1	3/1	3/1	3/1	3/1	4/1	4/1	4/1	5/1
3 in.	—	—	—	—	—	—	—	—	—	5/1	5/1	5/1	6/1
3 $\frac{1}{2}$ in.	—	—	—	—	—	—	—	—	—	5/1	5/1	5/1	6/1
4 in.	—	—	—	—	—	—	—	—	—	5/1	5/1	5/1	6/1
4 $\frac{1}{2}$ in.	—	—	—	—	—	—	—	—	—	5/1	5/1	5/1	6/1
5 in.	—	—	—	—	—	—	—	—	—	5/1	5/1	5/1	6/1
5 $\frac{1}{2}$ in.	—	—	—	—	—	—	—	—	—	5/1	5/1	5/1	6/1
6 in.	—	—	—	—	—	—	—	—	—	5/1	5/1	5/1	6/1
6 $\frac{1}{2}$ in.	—	—	—	—	—	—	—	—	—	5/1	5/1	5/1	6/1
7 in.	—	—	—	—	—	—	—	—	—	5/1	5/1	5/1	6/1
7 $\frac{1}{2}$ in.	—	—	—	—	—	—	—	—	—	5/1	5/1	5/1	6/1
8 in.	—	—	—	—	—	—	—	—	—	5/1	5/1	5/1	6/1
8 $\frac{1}{2}$ in.	—	—	—	—	—	—	—	—	—	5/1	5/1	5/1	6/1
9 in.	—	—	—	—	—	—	—	—	—	5/1	5/1	5/1	6/1
9 $\frac{1}{2}$ in.	—	—	—	—	—	—	—	—	—	5/1	5/1	5/1	6/1
10 in.	—	—	—	—	—	—	—	—	—	5/1	5/1	5/1	6/1
12 in.	—	—	—	—	—	—	—	—	—	5/1	5/1	5/1	6/1

Mark C

FLAT.

All sizes made to order.

No.	Height	Width	Depth	Price	No.	Height	Width	Depth	Price
1	4 $\frac{1}{2}$	2 $\frac{1}{2}$	11-16	No ears	4/1	23	4 $\frac{1}{2}$	2 $\frac{1}{2}$	12
2	4 $\frac{1}{2}$	2 $\frac{1}{2}$	—	—	24	23	4 $\frac{1}{2}$	2 $\frac{1}{2}$	12
3	4 $\frac{1}{2}$	2 $\frac{1}{2}$	—	—	25	24	4 $\frac{1}{2}$	2 $\frac{1}{2}$	12
4	4 $\frac{1}{2}$	2 $\frac{1}{2}$	—	—	26	24	4 $\frac{1}{2}$	2 $\frac{1}{2}$	12
5	4 $\frac{1}{2}$	2 $\frac{1}{2}$	—	—	27	24	4 $\frac{1}{2}$	2 $\frac{1}{2}$	12
6	4 $\frac{1}{2}$	2 $\frac{1}{2}$	—	—	28	24	4 $\frac{1}{2}$	2 $\frac{1}{2}$	12
7	4 $\frac{1}{2}$	2 $\frac{1}{2}$	13-16	—	29	34	7 $\frac{1}{2}$	4 $\frac{1}{2}$	12
8	5 $\frac{1}{2}$	2 $\frac{1}{2}$	11-16	—	30	35	5 $\frac{1}{2}$	4 $\frac{1}{2}$	12
9	5 $\frac{1}{2}$	2 $\frac{1}{2}$	—	—	31	35	5 $\frac{1}{2}$	4 $\frac{1}{2}$	12
13	5 $\frac{1}{2}$	4	1 $\frac{1}{2}$	—	32	37	5 $\frac{1}{2}$	3 $\frac{1}{2}$	12
15	5 $\frac{1}{2}$	4	1 $\frac{1}{2}$	—	33	41	4 $\frac{1}{2}$	3 $\frac{1}{2}$	12
16	5 $\frac{1}{2}$	4	1 $\frac{1}{2}$	—	34	42	6 $\frac{1}{2}$	4 $\frac{1}{2}$	12
19	10 $\frac{1}{2}$	8 $\frac{1}{2}$	1 $\frac{1}{2}$	No ears	42/1	52	5 $\frac{1}{2}$	3 $\frac{1}{2}$	No ears
20	14 $\frac{1}{2}$	8 $\frac{1}{2}$	2	No ears	36/1	58	5 $\frac{1}{2}$	3 $\frac{1}{2}$	No ears
21	14 $\frac{1}{2}$	8 $\frac{1}{2}$	3 $\frac{1}{2}$	—	—	—	—	—	—

All with ears, unless otherwise stated.
SPECIAL QUOTATIONS FOR LARGE QUANTITIES.

NOTICE.—Care should be taken in all instances, when ordering, to specify the Crucibles, &c., manufactured by

THE MORGAN CRUCIBLE CO. (Sole Manufacturers of Morgan's and Salamander Crucibles), Battersea Works, LONDON, S.W.

F. DARTON & CO.,

MAKERS TO H.M.'S GOVERNMENT,

Established
1834.

45 ST. JOHN STREET, WEST SMITHFIELD.

Established
1834.

Darton's Improved Imperishable Index Clinical Thermometers,

As noticed in the *Lancet*, *Chemist and Druggist*, &c., can be obtained only of the Inventors and Makers; cannot get out of order, and are therefore specially suited for Export.

PLAIN CLINICAL THERMOMETERS (FAHRENHEIT OR CENTIGRADE SCALE).

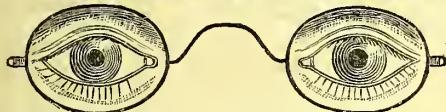
4 or 6 in., in case, 3/6 each. 4 in. or 6 in. ditto, contracted in Ebony Case, 4/ each. If with Magnified Bore, 6/ each.

DARTON'S IMPROVED DITTO, IMPERISHABLE INDEX, 4 or 5 in., 5/ each. Ditto, Enlarged and Magnified Bore, with lens front, 7/ each. One Bent and One Straight 6-inch Clinical Thermometer, in Morocco Snap Case, 10/6 the set. Kew Certificates, 1/3 each extra.

BATH THERMOMETERS, Japanned Tin Cases, Silvered Metal Scales, 8 inches long, 12/ per dozen. Ditto, Enamelled Tubes, with Dr. Forbes' Specifications, 15/6. 8-in. Boxwood ditto, with spirit tubes, 5/6 doz. Ditto, Bevelled Porcelain Scales, 18/ doz.

All kinds of Thermometers and Barometers made to Order. A large Selection always in stock.

S P E C T A C L E S .



Iron Frames, Convex Glasses, Assorted Sights.
Common, 18/ per gross. Better ditto, 21/ and 30/ per gross.

Cases for ditto, 12/ per gross.

Steel Frames—Common, 4/6 & 6/ per dozen. Better Quality, 10/ per dozen.
Ditto, fitted with Neutral Tint Glasses, 12/ per dozen.

Large Eye, Best Quality Frames, and Best Neutral Tint Glasses, 30/ dozen.

Ditto Light Ball-Joint Frames, 18/ per dozen.

Ditto Light Straw Frames, Grooved Glasses, 24/ per dozen.

Ditto Extra Light Frames, Best White Glasses, 36/ per dozen.

Pantoscopic ditto, with Polished Edge Glasses, 36/ per dozen.

Steel Frames, with Convex Pebbles, 27/ per dozen.

Ditto Better Quality Frames, 42/ per dozen.

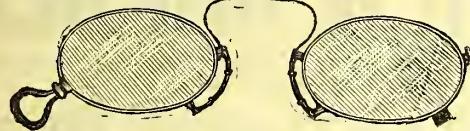
Ditto Best Pebbles, 48/ per dozen.

Ditto Extra Light Frames and Best Pebbles, 60/ per dozen.

Globular Spectacles, Neutral Tint, Domed Glasses, 7/6 per dozen.

Ditto Stout English, 30/ per dozen. [dozen.]

D EYE SPECTACLES, Neutral Tint Glasses, Best Quality, 48/ per



Common Steel Folders, 4/6 per dozen. Steel, 6/ and 7/6 per dozen.

Ditto Grooved Glasses, Light Frame, 15/6 per dozen.

Ditto Nickel Plated, Grooved, Extra Light, 24/ per dozen.

Ditto Best Fancy Handled, 42/ per dozen.

New Illustrated Price List of Spectacles and Folders, with Trade Terms, on application.

D EYE SPECTACLES—continued.

Nickel Plated Folders, Coloured Glass, 36/ per dozen.

Tortoisehell ditto, Convex Glasses, 30/ per dozen.

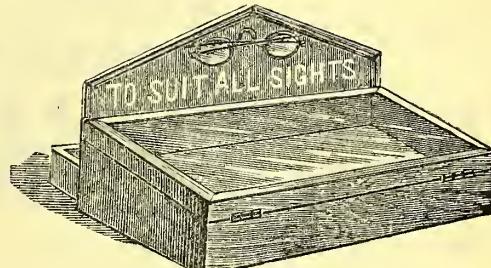
New Pattern Gold Cased Japanese Folders, will wear like gold, 60/ per [dozen].

FRAMELESS FOLDERS from 7/6 per dozen.

Nickel Plated Japanese Folders, with Domed Glasses, Best Finish,

Blue and Neutral Tint, 30/ per dozen.

For the convenience of Customers who have not yet started the Sale of Spectacles, we fit up Show Cases, containing an assortment of Spectacles, complete with Sight Tester and Instructions, as follows:—



Our £2 2s. SHOW CASE for the Counter, in Polished Mahogany, contains 4 dozen Spectacles, Sight Tester, and Instructions for suiting sight.

Our £3 3s. CASE contains, in addition, 2 dozen Folders and 2 dozen Cases. Larger sized Cases, in Polished Mahogany or Ebonised, with an assortment of superior quality Spectacles, Folders, and Cases, £6 6s. and £10 10s.

Ditto, with assortment of Best Pebble Spectacles and Folders, £21.

E L E C T R I C B E L L S .

NEW FORM METAL FRAME ELECTRIC BELL,
with $2\frac{1}{2}$ Plated Dome, 4/6 each. Complete, with Large Battery, Push Piece and Wire, and Instructions for Fixing, 10/6. If with best quality bell, 14/6.

INVALIDS' ELECTRIC BELL SET,

with Bell and Battery in Polished Case, 30 feet of Flexible Line Wire, and Pear Push, 21/ each. Ditto in polished Mahogany Case, with 3-in. best bell, 27/.

Estimates given for Fitting up Houses or Shops.

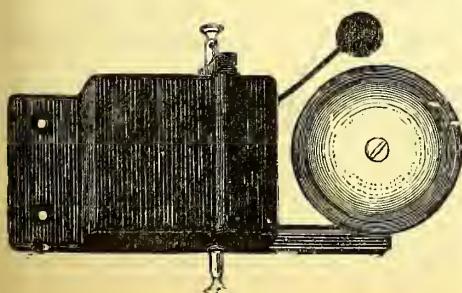
MAGNETO ELECTRIC MACHINES,

in Pine Case, 10/6; ditto in Mahogany, 16/6; ditto, best quality, with plated handles, &c., 22/6.

INCANDESCENT LAMPS

for the Electric Light, 4/ each. Ditto, with 3 Cell-Battery complete, 21/ each.

NEW ILLUSTRATED PRICE LIST OF ELECTRIC BELLS AND FITTINGS SENT POST FREE ON APPLICATION.





W. H. BAILEY & SON,
38 (late 16) OXFORD ST., LONDON,
Six doors from Hanway Street.
ESTABLISHED A.D. 1833.



FIRST PRIZE (SILVER MEDAL) FOR TRUSSES AWARDED BY THE WORSHIPFUL COMPANY OF CUTLERS OF THE CITY OF LONDON, MAY, 1879.

FIG. 1.

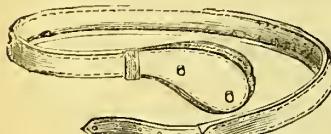


FIG. 4.

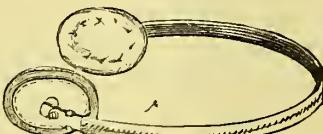
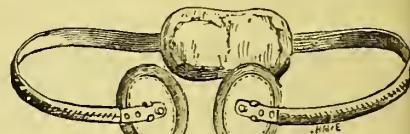


FIG. 5.

**TRUSSES.**

Circular Trusses, single, as Fig. 1, basil and chamois or basil and moleskin	per doz. £1 1 0
Circular Trusses, double, basil and chamois or basil and moleskin	per doz. 1 14 0
" " with extending backs	2 14 0
Salmon & Ody's Expired Patent, single, Fig. 4	1 10 0
" " double, Fig. 5	3 0 0
Moc-Main Lever, single	each 0 8 0
" " double	0 13 6
Coles's Expired Patent, single	0 6 0
" " double	0 12 0
Borotal Trusses, basil and chamois or moleskin, single	0 4 0
" " double	0 7 0

SUSPENSORY BANDAGES.

No.	No.	SUSPENSORY BANDAGES—continued.		
1. Cotton Bags and tape under-straps	6. Silk Oxonian, superior quality, bands of buff jean, with drawing-strings	per doz. £1 4 0		
2. Cotton Oxonian, with drawing-strings	7. Silk Bags, to button on, with tape under-straps	1 1 0		
3. Silk Bags and tape under-straps	8. " " " under-straps to button	1 4 0		

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Knee-caps	0 6 6	0 10 8	0 4 0
Calf-pieces	0 7 6	0 10 0	0 4 6
Socks	0 5 6	0 8 6	0 3 10 0
Wristbands	0 2 3	—	0 1 8
Knee Stockings	0 16 0	1 5 0	0 9 2
Belts, to draw on	0 16 6	—	0 12 1

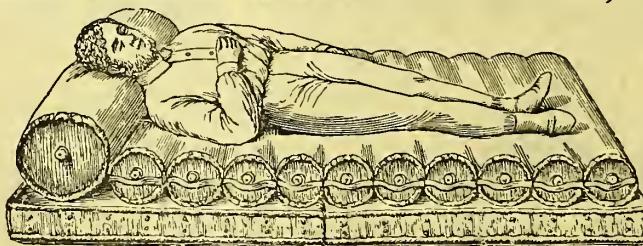
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Atropia Sulphas ..	1-150 grain.	Strychnia Sulphas ..	1-100 grain.
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- The Pharmaceutical Society of Victoria.
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- The Pharmaceutical Society of New Zealand.

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In subsequent pages will be found a complete report of the meeting of the British Pharmaceutical Conference, which wound up at Hastings on the evening of the 14th inst., within twelve hours of the publication of this journal. We think readers will give us credit for a smart piece of journalistic work in producing this thorough report of the meeting at such a short interval.

**

The space occupied by the important report of the Conference necessarily crowds out some of our regular features. We have some more illustrations of the Health Exhibition ready, but these must stand over till next month.

**

In an article commenting on "the learned address of the President" of the Pharmaceutical Conference, the *Times* recognises that the modern education of the chemist

"suggests that the status which he may claim from his attainments should be ungrudgingly recognised." The *Times* also endorses that part of Mr. Williams' address claiming for pharmacists an official position on the Pharmacopoeia Committee.

**

Very great interest has been excited in the wholesale trade by the sensational events of the past ten days in regard to quinine. The largest producers in the world have failed, and with them has fallen the important house of Meier & Co., the firm which not long ago made an almost, but not quite, successful attempt to corner the bark market. The inside history of the bark and quinine trade of the past two or three years, if it could be narrated by some one who has been actually concerned in it, would make a romantic chapter. There have been international and personal struggles; there have been diplomatic moves and combinations, this way and that way; bark holders and quinine holders have been pitted against each other, and warfare has occurred within each of the camps. England, France, Germany, Italy, the United States, Bolivia, Peru, Ceylon, and other countries, have had rival and often opposing interests. Some very clever men have been pulling the wires, and hundreds of thousands of ounces of quinine have been shuttlecocked backwards and forwards between Europe and America. The result of all these mysterious movements is before us. Anyway, the public have no reason to complain of the present position.

**

The frequent unfairness with which the Sale of Food and Drugs Act is administered calls for some attention. This month we report the trial of a shopkeeper at Alfreton, who had sold sweet spirits of nitre. The case was defended by the wholesale druggist who had supplied the article. The public analyst said the preparation was devoid of its most important constituent. Somerset House was appealed to, and though the certificate from the chemists there does not appear in the report, it was evidently favourable, as the inspector who prosecuted got the permission of the magistrates to withdraw from the case. Presumably, the prosecution was an entire mistake; but that would not have been discovered without a somewhat expensive defence. On what possible principle of justice was the defendant refused his costs? That somebody must pay for a blunder is clear; but why the innocent victim thereof should be charged any part thereof is not at all obvious. It is nearly certain that it would have been cheaper to plead guilty and pay the fine than to prove innocence; and the next defendant in that district might plausibly say to the Bench, "I am innocent, but I can't afford to prove it; justice is too dear in this locality: I must submit to injustice."

**

The letter we printed in April last from a disappointed assistant who had emigrated to New Zealand and had left it in disgust has called forth a vigorous and statistical reply from our regular New Zealand correspondent, a reply which, we think, most readers will admit conclusively disposes of all the general accusations raised against that colony, though, of course, the particular complaints of our first correspondent remain unaffected.

**

According to the report of the Board of Inland Revenue the quantity of methylated spirits manufactured in Great Britain to March 31, 1884, amounted to 2,236,962 gallons, being 136,197 gallons more than in the previous year. "There is no reason to believe that any part has been used for illegitimate purposes." There are 18 licensed makers and 7,361 licensed retailers of methylated spirits. Coffee-mixture labels brought in 5,673. Os. 10½d. this year, being 671. 1s. 4d.

less than in the previous year. There are 869 chemists in the United Kingdom licensed to use stills, 65 licensed makers, and 2,861 licensed retailers of sweets (British wines).

**

Dr. E. B. Truman, public analyst for Nottingham, borough and county, relates in the *Lancet* the particulars of two cases of poisoning, concerning which he had given evidence at the inquests. One of these cases was reported by us. The first instance occurred in 1882, when a woman died of arsenical poisoning. Both she and her husband took a dose of carbonate of magnesia bought from a woman who had bought her stock from a Mr. B., who, in turn, had bought his from a leading druggist in Nottingham, and he from a London wholesale house. The theory was that somehow arsenic had got mixed with the magnesia. The second case occurred this year, and refers to a child who had taken Epsom salts with which, it was supposed, some strichnine had got mixed. Dr. Truman says he brings forward these cases for their medico-legal interest. He points out that they suggest a new and facile field for the poisoner of the future. If A buys a medicine of B and a poison of C, and mixes them, who is to say whether A did so or whether B did not sell the medicine adulterated with the poison? The question is of interest to the vendors.

**

At the Manchester Assizes last month Mr. Justice Day added his contribution to the feud which never quite dies out between the lawyers and the doctors. A man had struck his father a blow on the head with a hammer. The father was laid up for a day or two. He got better, but a few days later fell ill again, and died nine days after receiving the blow. The question at issue was whether the man died in consequence of the blow or from apoplexy due to other causes. In summing up, Mr. Justice Day said to the jury;—"You must sacrifice your own views and your common sense. You are bound by what the doctors say. No one but a doctor could have any doubt about it; but juries must be guided by their evidence, and you must acquit the prisoner. Although it is proved to your satisfaction that from the time this man was struck he gradually lingered, and then died, if the doctors say the blow had nothing to do with the death you must acquit the prisoner. I can very well understand, even where a man's life is at stake, the reluctance you feel at stultifying yourself by giving such a verdict. After what you have heard you would not be justified in finding this man guilty of murder, although I am sure, as men of common sense, you are satisfied of it. Nobody can doubt it, except these doctors." We have had enough experience of "these doctors" ourselves not to feel some sympathy with the judge's expressions.

**

We mentioned recently the announcement of a Medical and Pharmaceutical Exhibition which was to be held at Humphreys' Hall, Albert Gate, S.W., in June, and was then postponed till the autumn. Recently a new circular has been published, stating that the exhibition would be opened on October 13 under the patronage of the patrons, committee, and staff of the University College Hospital. The august names of these were added, including one queen, three royal highnesses, various dukes, earls, bishops, baronets, and others, and a goodly array of medical talent. Soon after a letter was published in the daily papers signed by Berkeley Hill, chairman of the Medical Committee of University College Hospital, asserting that the medical staff, for whom alone he was authorised to speak, had positively declined to give their names in support of the undertaking. Mr. Southwick Rogers, the manager and secretary of the exhibition, replied to this by sending for publication a letter written to him by Mr. Newton H. Nixon on June 19, on behalf of the hospital committee, thanking him for his offer to hand over the proceeds of the exhibition to the hospital, and adding that so far as they themselves were concerned, they would be much pleased that the exhibition should be held to include their patronage. Mr. Nixon adds, "I have seen the Dean of the Faculty of Medicine, and he agrees that you can also put on your notices, 'Under the patronage of the medical staff of the hospital.' After the meeting of the Medical Committee in July, I will send you a formal authority for this." This letter from the hospital secretary is admitted, and Mr. Rogers can

hardly be blamed for having got his circulars out on the strength thereof. Mr. Berkeley Hill has since explained that Mr. Nixon had exceeded his instructions when he wrote that letter, and that on July 9 the Medical Committee met and refused to lend their names to the enterprise. This information was despatched on July 11, uot to Mr. Rogers, but to Mr. Humphreys, who states that he forwarded the letter to Mr. Rogers on the 12th ult. Probably, the circulars were printed by that time, and to the outside intellect it seems difficult to understand why something like an apology at least should not have been offered publicly to Mr. Rogers for the trouble he had been occasioned by Gower Street officialism.

**

Professor Wanklyn has given some of his views on water to an interviewer from the *Echo*. He says that seventeen years ago he and Mr. E. T. Chapman and Mr. Miles H. Smith brought out the ammonia process of analysing water, which has superseded all others, and is now in general use. They did not take out a patent, and the result has been that although, even on Dr. Frankland's authority the process has been almost universally adopted, analyses for Government are made by anyone but the inventor. As for his colleagues, poor Chapman disappeared in the Hartz Mountains in 1871, and has never since been heard of, and Dr. Smith is now blind. He reckons that 2,000,000 of analyses of water have been made by his process, and he has never derived any benefit from it. [We understand the Professor to mean by official rewards.] He considers the water-supply of London very pure. The Kent Company he puts first, the New River second, West Middlesex, Grand Junction, and Chelsca waters are pure in summer but not quite pure in winter, while the Southwark and Vauxhall and Lambeth Companies' waters he does not regard as quite satisfactory. Speaking of filters, Mr. Wanklyn says, "Every house should have its filter. The silicated carbon filter is the best. I have passed a solution of strichnine through this, and have then drunk it; such confidence have I in the filter." The conversation then turned to milk and beer, and finished with the Professor's complaint against the Royal Society. He was proposed as a Fellow by Professor Williamson, and his schedule was extensively signed. But Professor Balfour, of Edinburgh (known as "Woody Fibre"), kept him out in 1867, and Brayley in 1868, and Mr. Wanklyn has not applied again. Roscoe had to apply four times, and Lethby made sixteen unsuccessful applications.

**

An International Inventors' Exhibition is the proposed scheme for the South Kensington show of next year. It is to comprise apparatus, appliances, processes, and products invented or brought into use since 1862; but objects which have been shown at the Smoke Abatement Exhibition of 1881, at the Fisheries of last year, or at the existing Health Exhibition, are to be excluded, as are also agricultural implements. A special display of musical instruments is also to be arranged for.

**

Our friends on the *Pharmaceutical Record* of New York compliment the English Pharmaceutical Council on having done a "noble and a generous deed in awarding their late secretary a life pension of 400*l.* per annum." From what we hear, it seems to be generally supposed that the Pharmaceutical Council have thus lavished away a new 400*l.* It is a pity that the Council should have to bear the burden of more virtues than those which they actually possess, and we think it only proper to make it clear that the new arrangement is only a re-arrangement of the expenditure formerly incurred. Hitherto Mr. E. Bremridge received 550*l.* a year as secretary and registrar, while a salary of 300*l.* was paid to Mr. R. Bremridge as assistant secretary and deputy registrar. Now the latter office is abolished, Mr. E. Bremridge receives a pension of 400*l.*, while Mr. R. Bremridge is paid 450*l.* for fulfilling the whole duties. There is no injustice in this arrangement; at the same time, there is no gorgeous generosity about it. A good many of those who have experienced Mr. Bremridge's politeness for so many years want an opportunity of expressing their cordiality towards him by some sort of testimonial. Several communications have been made to us in this sense, but for the moment we withhold further reference to them.

The Pharmaceutical Council.

THE monthly meeting was held on August 6, Mr. M. Cartrighte, president, in the chair. There were only thirteen out of twenty-one members of the Council present. Messrs. Andrews, Borland, Bottle, Butt, Richardson, Robbins, Schacht, and Squire were absent.

THE INAUGURAL ADDRESS.

The PRESIDENT announced that Mr. W. T. Thiselton Dyer, M.A., C.M.S., F.R.G., Assistant-Director of the Royal Gardens, Kew, had consented to give the inaugural address to the students in October next.

MR. BREMRIDGE.

A letter was read from Mr. Elias Bremridge, heartily thanking the Council for the kind words that had been said of him, and for the handsome provision that had been made for him.

The Council unanimously confirmed the appointment of Mr. Richard Bremridge as Secretary and Registrar, and also authorised him under seal to recover penalties.

THE MEDICAL BILL.

A vote of thanks to the local secretaries who had exerted themselves in respect to the Pharmacopoeia clause was moved by the PRESIDENT and seconded by the VICE-PRESIDENT. The latter would have liked to have thanked the many members of Parliament who, to his knowledge, had gone to the House night after night when this Bill was down to vote for their amendment.

Mr. HEMPSHIRE, though disappointed that the Bill had been dropped, believed they had done good work in educating members of Parliament and in learning their own strength.

Mr. SYMES expressed similar views, and said that his difficulty had been to convince people that a claim so reasonable required any agitation in support of it. One member who presented a petition had written to him since, pointing out that the Bill would no doubt be re-introduced next session, as medical men were very desirous to carry it through; and medical men had told him the same thing, but he suggested that some means should be taken in the interim to communicate with the promoters of the Bill, because after the evidence they must have had before them of the unanimity of opinion, not only amongst pharmacists, but also amongst medical men, he could not think they could resist it. He had found no difficulty in obtaining thirty signatures from medical men in Liverpool, and, had more time been allowed, he had no doubt 100 signatures could easily have been obtained. He had reason to believe that Mr. Mundella was half inclined to give way.

On the motion of the PRESIDENT, seconded by the VICE-PRESIDENT, the thanks of the Council were offered to the medical men who had supported their petitions.

ADDITION TO THE REGISTER.

Richard George Chapman, 42 High Street, Smethwick.

THE BENEVOLENT FUND.

The Committee recommend three grants of 10*l.* each to widows of registered chemists and druggists, one of 5*l.* to a registered chemist and druggist, 10*l.* 10*s.* to be placed in the Secretary's hands to aid in the election of a child to an orphan asylum, and 25*l.* to the Secretary's Casual Fund. The Vice-President remarked on the growing tendency to make new applications for assistance within the twelve months. The Committee did not wish to lay down a fixed rule, but they would not encourage the practice.

THE PROFESSORS' REPORTS

had been received by the General Purposes Committee.

Professor Redwood reported that the lectures of Mr. Wyndham Dunstan on some branches of physics and on organic chemistry, and the lectures and demonstrations by

Mr. Ince on dispensing and practical pharmacy, had proved beneficial to the students. For the sessional examination there were twelve competitors, and the whole of the papers were creditable. The examination for the bronze medal at the end of the second course was less satisfactory, there being but four competitors, of whom only one attained a position meriting distinction, but that one did very well.

Professor Bentley reported most satisfactorily of the good conduct, punctuality and regularity of attendance, diligence and progress generally of the students, and the numbers were above those of last year.

For the Herbarium prize only two collections were sent in. He recommended that a bronze medal be awarded to the first, containing 340 specimens, and a certificate of merit to the second, containing 250 specimens.

Chemistry and Pharmacy.

Bronze Medal.—Ernest Henry Barratt (five months' course).

Silver Medal.—Fraser McDiarmid.

Certificates of Honour.—Edward Cullinan, Ernest John Eastes, Robert Wynne C. Pierce.

Certificates of Merit.—Reginald Edward Nicholls, Albert Wilson, Josiah William Steward, Robert Roberts.

(Ten months' course.)

Botany and Materia Medica.

Bronze Medal.—Lewis Walter Hawkins.

Certificate of Merit.—Ernest Henry Barratt.

(Five months' course.)

Silver Medal.—Fraser McDiarmid.

Certificates of Honour.—Robert Wynne C. Pierce, Ernest John Eastes.

Certificates of Merit.—Josiah William Steward; Ernest Henry Barratt, Robert Roberts (equal); E. Haworth Earle, Richard Henry Norman (equal).

(Ten months' course.)

Mr. G. F. Callaway also obtained a sufficient number of marks qualifying for a certificate of honour, but, having been awarded a certificate of the same value in a former session, he is not permitted by the regulations to receive another.

Practical Chemistry.

Silver Medal.—Ernest John Eastes.

Bronze Medals.—Josiah William Steward, George Frederic Callaway.

Certificates of Merit.—Robert Wynne C. Pierce, Fraser McDiarmid (equal); Robert Roberts, Edward Cullinan.

Herbarium Prize.

Bronze Medal.—Ernest Saville Peck.

Certificate of Merit.—Charles Granville Wood.

Council Examination Prizes.

*Pereira Medal (silver), and Books, value 5*l.*, presented by Mr. T. H. Hills.*—Fraser McDiarmid.

*Pharmaceutical Society's Medal (silver), and Books, value 3*l.*, presented by Mr. T. H. Hills.*—Charles Mann Luxmoore.

*Pharmaceutical Society's Medal (bronze), and Books, value 2*l.*, presented by Mr. T. H. Hills.*—John Dolbear.

Jacob Bell Memorial Scholarships.

For these there were twenty candidates, seven in London, two at Nottingham, and one each at Brighton, Bristol, Canterbury, Exeter, Lincoln, Liverpool, Manchester, Newcastle-on-Tyne, Sheffield, Worcester, and York. Of these four had obtained more than the minimum number of marks requisite to entitle them to the award. The successful candidates were Robert Potts and Edward Ernest Morrall.

THE PHARMACY ACT.

The Solicitor reported that a penalty of 5*l.* and costs had been recovered from Frank Cooke, 1 Lewis Terrace, York Road, Battersea, and that William Beesley, 44 High Street,

Banbury, had paid into court before the hearing of the case two penalties of 5*l.* each with costs.

Several other cases of alleged infringements of the Pharmacy Acts had been considered by the Committee, and in most instances proceedings were recommended.

The Council reversed the decision of the Registrar in reference to Joseph Robinson, 334 Alfreton Road, Oldknow Street, Nottingham, and ordered that his name be placed on the Register.

EXAMINATIONS.

The following is a summary of the report of the July examinations:—Major—England and Wales, 22 candidates, 13 passed. Scotland, 1 candidate, who failed. Minor—England and Wales, 174 candidates, 60 passed. Scotland, 40 candidates, 19 passed. Preliminary—325 candidates, 166 passed. Eight certificates received in lieu of examination.

Pharmaceutical Society of Ireland.

THE monthly meeting of the Council was held on the 6th inst. Present, the President, Mr. J. E. Brunner, M.A., in the chair; the Vice-President, Mr. Draper; Dr. Montgomery, Dr. Collins, Sir George Owens, Dr. Tichborne; Messrs. Simpson, Wells, and Grindley.

The correspondence included a letter from the Chief Secretary for Ireland acknowledging the Society's request for the extension to Ireland of the Bill relative to the sale of Patent Medicines containing Poisons, and promising to submit the same to the Home Secretary.

A letter from Dr. Kaye, Q.C., clerk to the Privy Council of Ireland, acknowledging the resolution of the Council relative to placing the Government School of Science, South Kensington, on the list of chemical schools, and stating that it would be submitted to the Lord Lieutenant in Council.

A letter from the honorary secretary of the British Pharmaceutical Conference, inviting delegates to the meeting at Hastings. Mr. Payne and Mr. Wells were appointed delegates.

The Law Committee directed attention to the fact that in the city of Cork sales of cantharides and oxalic acid had taken place in improper parcels, which had not the names of the vendors affixed to them, and recommended that the attention of the Inspector-General and constabulary should be called to the total disregard of the Poisons Act of Ireland.

Dr. MONTGOMERY: What is the good of our taking notice of it?

The PRESIDENT: The complaint comes from one of our licentiates. The police are invested with the duty of seeing that the Poisons Act is carried out. The Inspector-General, on receipt of our letter, will, I hope, issue a circular to the police on the subject.

The report was adopted.

The PRESIDENT said the next business was a notice of motion by Mr. W. N. Allen, in the following terms:—

That it be an instruction to the examiners that in sub-dividing the subjects for examination, the minimum adopted by the Council shall be maintained in each sub-division in the same proportion.

Mr. Allen was not present, but had written to say that the proposal might be discussed in his absence if the Council thought it well to do so. It arose out of the new system of marking which was tried for the first time at the last examination. Mr. Allen's idea was that the system as carried out by the examiners, although a general compliance with the rule laid down, was not so in detail. For instance, candidates had been passed who had obtained the required percentage on their total, but who fell very short of it on particular subjects. Mr. Allen's idea was that the percentage should be obtained in each separate subject.

Dr. MONTGOMERY remarked that pharmacy was a most important subject, and it would be very wrong to allow a candidate to make up his deficiency in it by marks in botany or chemistry.

It was decided that, as Mr. Allen was not present, further discussion on the subject should be postponed.

Some financial business having been disposed of, the Council adjourned.

Metropolitan Reports.

TRADE FESTIVITY.

MESSRS. BURGOYNE, BURBIDGES, CYRIAX & FARRIES' 23rd annual excursion and dinner and 143rd anniversary of the establishment of the firm was held this year, on July 19, at Mutton's Hotel, Brighton.

The party left London Bridge, in saloon carriages, at 8.30 A.M., arriving at Brighton at eleven, when lunch was immediately served. The yacht *Lironia* was kindly lent by A. H. Cox, Esq., J.P., and after lunch a section of the party enjoyed the pleasures of the briny ocean. Others took advantage of special coaches for a trip to the Devil's Dyke. Dinner was fixed for three o'clock, and soon after that time the chair was taken by Mr. C. S. Webb, and the vice-chair by Mr. C. W. White. A capital dinner was served, and the usual toasts followed. Captain Gardener replied for "The Army, Navy, and Reserve Forces." "Success to the Firm" was proposed in felicitous terms by Mr. Allen, and ably responded to by the chairman. Mr. John Ibbs in facetious terms proposed "The Health of the Representatives at Home and Abroad," and called upon Mr. White, their foreign representative, to respond. Mr. White, in the course of his speech, said that commercial travellers were now the best investments he knew of, and, considering these days of severe competition, it was impossible for any house that wished to take anything like a front place to do without them. A few years ago, comparatively speaking, we could afford almost to laugh at the efforts of German and French houses to do the trade, and America certainly, within a quarter of a century ago, had scarcely passed the cradle stage; but now things had changed, and we had to meet these three formidable competitors in every market of the world. America was the country that we had to be most prepared for, and the secret of her success was that she studied the wants and the wishes of the people she had to do business with through the agency of commercial travellers, who, working by day and sleeping in the Pullman cars by night, swept the great continent of America from the Golden Gate of San Francisco in the West to its easternmost shores on the North Atlantic. "The Laboratory" was proposed by Mr. Arnold and responded to by Mr. Pitt, after which "The Health of the Visitors," by the vice-chairman, responded to by Dr. Kermot, of Calcutta, on behalf of himself and other friends from Mauritius, Cape Colony, America, Australia, Gibraltar, &c., who were present, brought an enjoyable day to a close. The weather was exceptionally fine.

DR. FARQUHARSON, writing to the *British Medical Journal* respecting the new edition of the British Pharmacopœia, hopes, although not very confidently, "that something may be done to bring this antiquated volume into harmony with modern usage." Besides the necessary new introductions, he wants to see a drastic and thorough overhauling of every page, in the true spirit of radical reform, and the summary ejection of many useless and superfluous things. Dulcamara and mezereou, sassafras and sarsaparilla, hemidesmus and canella, cusparia and krameria, serpentaria, and other rubbish of the kind are enumerated as so-called remedies which no one ever dreams of using. He would especially ask for the expulsion of the enema tabaci, whose use might fairly entitle any practitioner to the honours of the Old Bailey; of all the preparations of conium but the succus, of all the vapours, of aqua chloroformi, and of many of the more fancy varieties of iron and mercury. Phosphorus he has not much faith in, but if it is to remain he hopes some preparations may be devised which may enable us to prescribe it in an unaltered state. It seems to be chiefly out of regard for students that the doctor would thus lighten the Pharmacopœia. Lastly, he wants doses omitted. What may now happen is "the occasional inconvenience and discredit of having our prescriptions sent back by the druggist for revision if he thinks that the dose is too large. This may happen to anyone who orders more than 10 grains of quinine, 20 minimis of tincture of belladonna, 30 grains of bromide of potassium, 10 grains of iodide of potassium, 8 minimis of liquor arsenicalis, or 30 minimis of tincture of perchloride of iron; and on this question, at least, opinion will be unanimous that revision is required."

Provincial Reports.

CAMBOURNE.

AT the Cornwall Summer Assizes, before Lord Chief Justice Coleridge, William Saundry, a gardener and quack-doctor, was found guilty of having maliciously administered calomel to his wife, thereby endangering her life. Calomel had been put into her soup, and apprentices at two chemists' shops in Cambourne proved the purchase of the drug by the prisoner. He was sentenced to two years' imprisonment with hard labour.

BIRMINGHAM.

Notes written for THE CHEMIST AND DRUGGIST.

It is with pleasure that we can announce the purchase of an old-established business by the manager, whom we have known as apprentice, then assistant, to his late employer. In consequence of special circumstances, we are not at liberty for a time to mention names.

The shop and premises occupied by Mr. R. Walker, chemist, &c., 95 Smallbrook Street, also range of shopping at back (now void, consequently no rent stated), were put up by public auction on July 9, by Edwards, Son & Bigwood, and realised 2,050*l.* The property is freehold.

When we have seen repeatedly in THE CHEMIST AND DRUGGIST, in the usual November list, the names of those members of our profession who have been elected mayors, town councillors, or to any official position, we have been disappointed never finding any reference made to Birmingham. As if to make some amends—and a strong one, too—we can congratulate Mr. W. Price, pharmaceutical chemist, 157 Bromsgrove Street, on his being unanimously elected Chairman to the Birmingham Board of Guardians.

The establishment of a Birmingham agency and sample-room in connection with one of the leading wholesale drug-houses of London is talked of. What with Evans, Sons & Co., of Liverpool, already having an agency and sample-room in Barwick Street, our old wholesale houses here must look to their laurels.

A local chemist was asked by a customer if he would go and see a child "in a fit." He declined going, and explained he was not allowed to visit. He told them to put the child in a hot bath with mustard, give a dose of castor oil, and send for a doctor. The child getting worse, a neighbour ran off with it to the hospital, where it died a few minutes after admission. This case shows the censure and danger a chemist might incur when doing a kindness.

Notwithstanding all the "cutting shops" and "stores" started here, there are at present some good businesses in the market, which, if purchased by enterprising young men, combined with steady application and perseverance, will lead to successful issues. Amongst them we note four with returns from 600*l.* to 1,000*l.*, and one with, the addition of grocery attached, returns 4,000*l.*

BUSINESS AND RECREATION.—The second best design of a model flower-garden, exhibited at the Erdington annual flower-show, was shown by Mr. F. B. Collier, dispensing chemist, and for which he obtained a substantial prize.

CHARGE OF FRAUD.—At the Police Court, on July 14, Hugh Smith, chemist, back of 40 Vittoria Street, was charged on suspicion of obtaining by means of forged orders quantities of jewellers' paper, borax, &c., from different drysalters. He was remanded for inquiries to be made.

Poisoning Cases.—Margaret Owen with vermin-killer, fatal termination; Jane Cooper with carbolic acid, fatal termination; Catherine Jones with hydrochloric acid, fatal termination; Harriet Smith attempted suicide with a solution of sulphate of zinc and spirits of wine prescribed for an injured arm, was taken to the General Hospital, where the stomach-pump was used with successful results; Charles Ernest Hands attempted suicide with nitric acid, purchased from a chemist under a plea of it being wanted to test some silver articles; he was taken to the Queen's Hospital and

detained. In the face of the above cases, it is to be hoped that in the "long-expected" revision of the Poisons Act some stringent restrictions will be placed upon the sale of poisonous acids, which, under present circumstances, are sold with impunity.

Two inquests held recently are noteworthy. One was on a child thirteen months old, who, being "cross," received "a quarter of a teaspoonful" of an infants' preservative, purchased from the shop of a Mr. Hill, close by. The child died next morning from convulsions. The child had been weakly from birth. The coroner lectured against the preservative, but the jury brought in a verdict of "Death from convulsions" simply.

The other case was more curious. A woman had been treated at the Women's Hospital and brought away some medicine. Having some left over, she gave it to an old lady, "thinking it would do her good." The latter kept it by her in case of need, and some time after her grandchild, 3½ years old, not being well, got a dose of the unknown medicine. Immediately after taking it he was seized with convulsions, and died soon after. The mixture contained strychnine and iron.

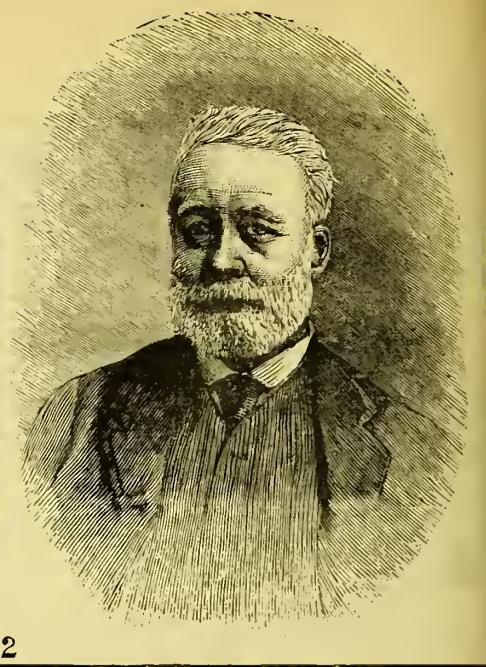
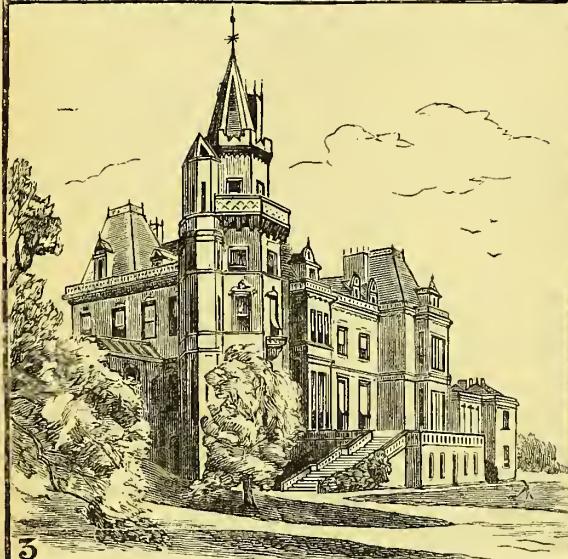
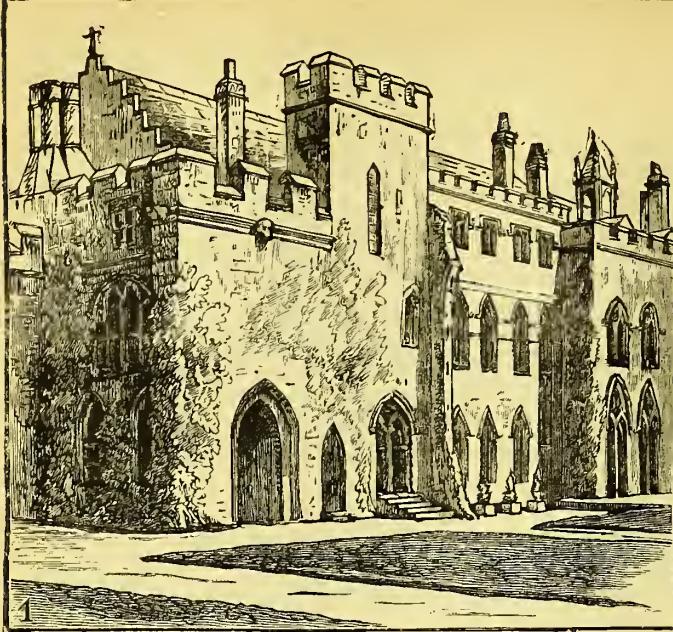
GLASGOW.

MESSRS. FRAZER & GREEN have removed their principal business from the premises they have occupied for 42 years in Buchanan Street, Glasgow, to more commodious premises a few doors away, at No. 127 in the same street. On August 7 the employés of the firm were entertained at a supper to celebrate the removal. In the course of the evening Mr. Frazer gave an interesting account of his experience of Buchanan Street during the past half-century. The business of which he is the head was established by an elder brother in 1830. He mentioned, among other reminiscences, the fact that among many members of the medical profession who had received their pharmaceutical education in that establishment was Sir Lyon Playfair, who was put under the senior Mr. Frazer for six months. His uncle, the late Mr. James Playfair, asked Mr. Frazer to "teach Lyon the use of his fingers, because they were all *thooms*."

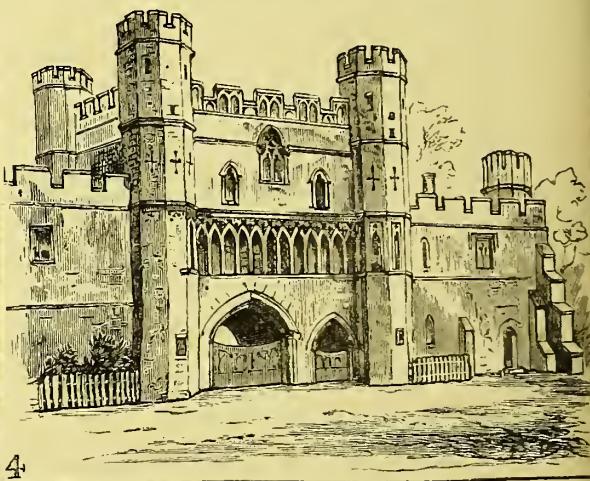
OLDHAM.

SUICIDE OF A CHEMIST.—On the 2nd inst. an inquest was held on the body of James Lees, aged 29, described as a chemist. According to the wife's evidence, deceased was of intemperate habits, and had frequently threatened to commit suicide. A doctor was sent for, and deceased was kept alive for six hours, though he informed the doctor he had taken 40 grains of morphia. The jury returned a verdict to the effect that the deceased committed suicide by poisoning himself with hydrochlorate of morphia whilst in an unsound state of mind. We are informed that he was not a registered chemist.

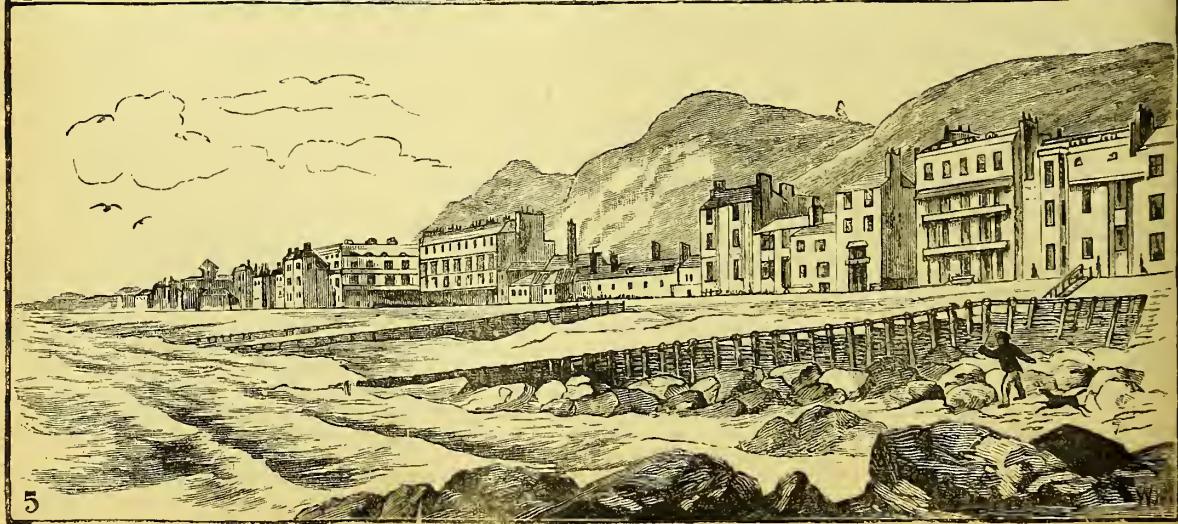
DRAPER'S "DICHROIC" INK.—Two of the minor miseries of human life are bad pens and bad ink; they, as a rule, go together. For those whose business or profession entails several hours of close writing every day, a scratchy or blotting pen, and pale or muddy ink, is a positive affliction under which Job himself would have lost all patience. Messrs. W. Hayden & Co., of 10 Warwick Square, Paternoster Row, E.C., are the agents for one of the most valuable inventions of the age: H. N. Draper's "Dichroic Ink"; provided with this, writing becomes a real pleasure. When I read that the "Dichroic" ink writes almost instantly a full black, does not corrode steel pens, dries rapidly on the paper, is not liable to blot, flows easily from the pen, resists the action of water and dilute acids, is quite free from greasiness, and that blotting-paper may be applied at the moment of writing, my mind misgave me as to the veracity of the statements; such a list of excellent qualities combined seemed too good to be true. After giving it a fair trial, I can confirm the truth of the statements in every particular. Never before have I used so completely satisfactory an ink, and certainly shall use no other, when I can get this make.—*Ladies' Gazette of Fashion.*—Scribes with such various requirements as C. H. Spurgeon, the sermon writer; Joseph Whitaker, the almanac maker; and Isaac Pitman, the phonographer; all speak in the highest terms of the merits of Draper's "Dichroic" ink.



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1 and 4—Views of Battle Abbey.

2—The President of the Pharmaceutical Conference.

3—Normanhurst.

5—A bit of Hastings.

THE British Pharmaceutical Conference.

TWENTY-FIRST ANNUAL MEETING, HASTINGS, 1884.

HASTINGS, Tuesday, August 12.

TO-DAY the twenty-first annual meeting of the British Pharmaceutical Conference was held at the Castle Hotel Assembly Rooms, Hastings.

The MAYOR OF HASTINGS (Alderman Thorpe) welcomed the members. He said, as Mayor of the ancient towns of Hastings and St. Leonards, he most cordially welcomed the Association of British Pharmacists. He trusted that the members would derive much benefit from the discussions, and he could assure them that their visit would be appreciated by the people of Hastings.

Mr. J. A. BELL (Hastings) also welcomed the members. Although the Hastings pharmacists could not show them any large chemical manufactories, they could show their visitors a town on the South-coast second to none in the kingdom. It was twelve years since they had visited a South-coast town, and he hoped that this Conference would promote brotherly good feeling amongst pharmacists. One of the consequences of the visit of British Pharmacists was the formation of a local association in Hastings, and they had settled everything in connection with it, the rules and so on; and the other night he had been chosen the first president. He should have great pleasure in assisting in anything that tended to promote pharmacy and the welfare of the Association and Conference. (Applause.)

The PRESIDENT thanked the Mayor and Mr. Bell for their kindly feeling towards the Conference; and he hoped that their visit would be of benefit in a pharmaceutical sense, and would also aid the progress of general science.

Mr. F. BADEN BENGER (one of the Hon. General Secretaries) said he had received letters of apology from several members. Professor Attfield (London) wrote from Oban:—"Having been actively engaged at each of the twenty-one annual meetings of the British Pharmaceutical Conference, I need scarcely assure you how much I regret being absent this year. Were I not certain that the Conference will go on increasing in prosperity and usefulness, I would not even now be away from the congenial society of its officers and members." Professor Bentley, Mr. Richard Reynolds (Leeds); Mr. Charles Umney, Mr. Charles Ekin, Mr. Walter Hills, Mr. Bullock, Mr. T. S. Dymond, Mr. Dunstan, Mr. R. A. Davis, all from London; Professors Quilman and Tieborne, of Dublin; Mr. E. C. C. Stanford, Glasgow; Mr. J. R. Hill and Mr. Stephenson, Edinburgh; Mr. E. T. Maben, Hawick; Mr. William Southall, Birmingham; Dr. Thresh, Buxton; Mr. Rocke, Melbourne; Mr. Ellinor, Sheffield; Mr. Payne, Belfast, and others also wrote to excuse themselves.

Mr. PLOWMAN read

THE REPORT OF THE EXECUTIVE COMMITTEE.

In accordance with the wish expressed at the Southport Meeting, Professor Attfield's two presidential addresses had been sent to all Members of the two Houses of Parliament, and almost 10,000 copies were purchased for private distribution.

Colonial secretaries have been appointed in many places:—

<i>Bengal</i>	..	..	..	C. N. Kermot, M.D., &c., Calcutta.
<i>Bombay</i>	..	..	..	D. S. Kemp, Bombay.
<i>Canada</i>	..	..	..	H. Sugden Evans, F.C.S., Montreal.
<i>Cape Colony and Natal</i>	..	..	..	A. Walsh, Port Elizabeth.
<i>New South Wales</i>	..	..	..	L. B. Bush, Bathurst.
<i>New Zealand</i>	..	..	..	T. M. Wilkinson, Dunedin.
<i>South Australia</i>	..	..	..	J. Parker, Adelaide.
<i>Tasmania</i>	..	..	..	A. P. Miller, Hobart.
<i>Victoria</i>	..	..	..	H. Shillinglaw, Melbourne.
<i>West Indies</i>	..	..	..	W. C. Ross, Port of Spain.

Much correspondence has passed between these gentlemen and the honorary general secretaries, as a result of which 3,000 circulars, setting forth the objects of the Conference, have been sent to them for distribution in their colonies, and they have been requested to endeavour to obtain papers for the Conference. Mr. Shillinglaw has sent the names of many new members, and has promised more. At the instance of Mr. C. R. Blackett, President of the Victoria Pharmacy Board, the Government of the colony has presented to the Conference, through Mr. Shillinglaw, nine decades of Baron Ferd. von Müller's *Encalyptographia*, with the promise of any decades which may be subsequently published.

Mr. Ross has sent a number of names from Trinidad and the West Indies. Mr. H. Sugden Evans has promised a large number from Canada, and Mr. Miller has sent from Tasmania a fine specimen of native bread described in Mr. Southall's paper. When the Conference met apart from the British Association for the first time, the meeting was held in London, so that it was difficult to form any judgment of what would be the result if its relation to the British Association were altered. This meeting at Hastings offered such an opportunity, and expressions of opinion were invited from those present. Another new departure is made this year in the matter of the entertainment of visitors by the Local Committee. This subject has been frequently debated and permissive resolutions passed, but at a meeting of the Executive Committee, held on December 19, 1883, the following resolution was carried:—

That in future the members attending the meetings of the Conference shall pay for the luncheons, &c., supplied to them during the business days of the meetings; and that if excursions be organised by the local members on the following days, all railway or other fares shall be paid for by the members attending those excursions.

The committee have noticed with concern that the entertainment of visitors had a tendency to become more lavish year by year, and that the cost might become a serious burden, not only to local pharmacists, but to those residing at a considerable distance. The resolution above was, in the interests of the Conference, passed to check the generous impulses of local committees.

It was thought that many towns would welcome visits of the Conference, if it were decided to abandon the practice of accompanying the British Association. The report stated that an association of chemists and druggists had already been formed in Hastings, as the result of the visit of the

Conference. The report concluded with expressions of regret that the Conference was about to lose the services of Mr. F. Baden Benger, who had been general secretary for thirteen years, and of Mr Ekin, who had been treasurer for seven years, and also that no applications for grants in aid of research had been made this year.

Mr. L. Siebold had been appointed editor of the year-book, and 54 British members (9 from Hastings) and 48 Colonial members had been added to the roll during the year.

Mr. BADEN BENDER then read

THE FINANCIAL STATEMENT.

	Dr.	£	s.	d.
To balance in hand ..	..	222	1	0
„ Sale of Year-book by Publishers ..	..	21	0	0
„ Sale of Year-book by Secretary ..	..	6	7	6
„ Advertisements, 1883 vol. ..	..	95	12	9
„ „ 1882 vol. ..	..	15	1	6
„ „ 1881 vol. ..	..	1	14	0
„ Subscriptions from members ..	..	723	3	4
July, 1883. To dividend on £250 Consols ..	..	3	13	5
Jan., 1884. „ „ „ ..	..	3	13	5
June. To sale of „ „ „ ..	..	248	15	0
		1,341	1	11
	Cr.	£	s.	d.
By Expenses connected with Year-book :				
Printing, binding, and distributing ..	504	4	6	
Editor's Salary ..	150	0	0	
Advertising and Publishers' charges ..	31	1	6	
Foreign journals ..	5	4	6	
„ Secretary's Salary (Mr. Prineep) ..	690	10	6	
„ Printing and Stationery ..	100	0	0	
„ Sundry expenses ..	85	0	8	
„ Postage ..	7	7	5	
„ Addressing Circulars ..	98	3	2	
„ Expenses of Southport Meeting ..	5	1	0	
„ Secretary's Expenses (Mr. Prineep) do. ..	9	17	0	
Grant to Mr. Elborne ..	6	0	0	
„ „ Messrs. Dunstan & Short ..	2	2	0	
„ „ Messrs. Dunstan & Ransom ..	5	0	0	
„ Cheque-book ..	5	0	0	
„ Balance at Bank ..	323	10	6	
„ Cash in Secretary's hands ..	3	5	6	
		326	16	0
Assets, July 1, 1884, Cash ..	326	16	0	
		1,341	1	11

The Bell and Hills Fund showed a balance of 257. 16s. 9d. at the Bank, besides 350*l.* invested in Consols. The interest, 107. 5s. 9d., had been expended in books for Southport.

The PRESIDENT moved and Mr. SAVAGE seconded the acceptance of the report and the financial statement; and thereupon

Mr. BOTTLE asked whether the sale of 250*l.* consols was rendered necessary owing to the want of funds, and that they were not so well off as in the preceding year. Did that arise from a diminution of members or from an increased expenditure?

Mr. BENDER explained that the expense had been rather exceptional this year, inasmuch as they had had their usual triennial whip for members, which cost a considerable sum, and they had had the whip for members in the Colonies. They had sixty-five more members than they had last year, so that they were not declining; and then they had had the expense of issuing Dr. Attfield's address to members of Parliament. They had spent 150*l.* more this year than last; but they believed that it would come back in response to the whip which had been paid for and issued.

Mr. BOTTLE expressed his satisfaction with the explanation.

The report and financial statement were then passed, and the President rose amid loud cheers to deliver his address.

PRESIDENT'S ADDRESS.

It is my duty to welcome the members of the British Pharmaceutical Conference to the present meeting, which I trust will prove, like many previous ones, to be both pleasant and profitable. On this occasion the Conference assembles under somewhat unusual circumstances. Hitherto it has met year after year, with only one exception, in the same town as the British Association, and as many members of the Con-

ference are also members of the British Association, the arrangement doubtless is a convenient one.

The more extended flight of the British Association this year to Montreal—where I hope it will have a most successful meeting—has, however, given the Conference an opportunity of visiting this pleasant and prosperous town of Hastings, an opportunity which might not have occurred for many years had the old order of the Conference always holding its meetings in the same town as the Association been adhered to.

The office of President of the Conference was accepted by me very reluctantly, and only in consideration of the very unusual nature of the present meeting. Whilst believing that I shall receive the indulgence of the members in my attempt to fill the office, I cannot expect to do so in an altogether satisfactory way; and when I look back at the list of names of those who have performed its duties with such distinguished ability, I must say that, even while I write, my courage seems to ooze out at the end of my pen. But I must do my best, and trust to your kind forbearance in allowing for my many faults and shortcomings.

It is sometimes useful to rest and look round at what the world of science has been doing. Perhaps, therefore, you will bear with me while I allude to a few points which strike me, and which seem to have a bearing, more or less remote, upon those branches of science with which we, as a body, are more particularly connected.

A few years ago, if I had been asked what was the leading characteristic of chemical investigation, I think I should have answered, the development of our knowledge of coal-tar products, and more especially concerning the many and beautiful colours derived from them. This study has not only had a most important bearing upon the technical and industrial application of scientific knowledge, but it has also led to the establishment of abstract scientific theories of the greatest importance. It is true that this great wave of thought and investigation may not appear to have influenced directly, to any great extent, the subject in which we are most nearly interested, namely, pharmacy. Still this, like all other true knowledge, will indirectly produce an effect which may yet be found of great importance in the practice both of medicine and pharmacy. Indeed, it should not be forgotten that the very commencement of the knowledge of the coal-tar colours was derived from a research undertaken by the illustrious Dr. Perkin, at the instigation of my much-valued old friend, Dr. Hofmann, to build up quinine artificially. It is true the proposed result was not obtained, but another; this, however, though for a time quite neglected, has since proved most momentous. I think, therefore, we may claim that pharmacy has had a share in instigating this most important development of chemical knowledge.

Notwithstanding that Perkin's attempt to effect the synthesis of quinine was in this respect a failure, the artificial formation of the vegetable alkaloids and acids has remained a branch of research regarded by pharmacists with very great interest. Foiled in their first attempts to build up various compounds by comparatively direct combination, chemists have shown in their later researches a tendency to commence their work with careful experiments, having in view to throw light upon the rational composition of the bodies they seek to form. These researches have not been unfruitful, in that they have rendered more or less practicable the artificial production of representatives of several natural organic compounds. Moreover, although they have not, up to the present time, led to the complete synthesis of any vegetable alkaloid, they have yielded extremely interesting and useful information concerning the constitution of these important bodies, whilst the natural bases have been supplemented by a large number of artificially-formed basic substances, some of which have already found a place in medicine. Thus Hofmann has shown that piperine, the alkaloid of pepper, can be built up from pyridine, a coal-tar base, and that piperidine, one of the intermediate compounds which is also obtained with piperic acid when natural piperine is split up by potash, is probably a stepping-stone to the formation of coniine and atropine, with the former of which it is homologous. Ladenburg has reduced the number of Solanaceous mydriatic alkaloids to two—atropine and hyoscyamine—and shown that one is convertible into the other; and that the basic nucleus, tropine, common to both of them, is capable of combining with acids to form a whole series of

new compounds, one of which, homatropine, has already been put to practical use. Turning to another important alkaloid, Grimaux has confirmed a previous suspicion that in some respects morphia behaves as an alcohol, and that by treating it for the introduction of a methyl group in the place of a hydroxyl group morphia can be readily converted into codeia. The identity of the substitution product with codeia was at first questioned by the celebrated German chemist, Hesse; but Grimaux's statement was confirmed by a member of this Conference, Mr. D. B. Dott, of Edinburgh; and it is now admitted that codeia is a monomethyl ether of morphia, Hesse having been temporarily misled by the formation of some dimethylmorphia. In a similar way it has been shown that caffeine may be obtained from theobromine and theobromine from xanthine by the introduction of successive methyl groups, whilst xanthine itself is derivable from guanine, a constituent of guano. Even while I write it is announced that the complete synthesis of xanthine has been effected by Gautier, so that if these various statements are correct we appear to be within sight of the production of caffeine artificially.

Chinoline is a product of coal-tar, but was originally produced by the destructive distillation of cinchonine, quinine, &c. The two products, although nearly identical, can, however, be distinguished by careful comparison. Chinoline is a powerful base, and one of its salts, the tartrate, has been largely employed in medicine. Chinoline has doubtless great activity, and in some of its characters it appears to coincide in medicinal activity to quinine, but in a different, or, we might say, uncontrollable manner. Still more lately the so-called "kairine," which is really a salt (the hydrochlorate) of a methyl substitution compound of chinoline and appears to possess very considerable activity, has been employed in fever cases to reduce the temperature of the patient. But there appears to be some evidence that the power of the remedy is gradually changed or reduced by keeping, and that, after a time—at present undetermined—its action is very different from that of the freshly-prepared article. This would be, if correct, a serious consideration, and would tend to prove that the constitution of this artificially-produced substance is very different in its nature to that of an alkaloid produced by natural means.

Chemical investigators have also been devoting much attention to explosive substances. Now, as most of these are nitro substitution compounds, it is hardly surprising to find that among them are substances that have proved capable of acting as potent remedies in the hands of medical men, when manipulated and brought into convenient form for administration by pharmaceutical skill. Need I say I allude to the introduction of such bodies as nitro-glycerine and nitrite of amyl into the field of practical medicinal agents?

These instances will suffice to show the nature of the information that has been gleaned and some of the contributions that have been made to our store of available medicinal agents whilst working out the synthesis of organic compounds and other great chemical problems. It will be of at least equal interest to devote a few moments to the consideration of some of the artificially-formed substances that have been put forward as representatives of natural compounds. I may say at once that, in my opinion, the results hitherto obtained are not of a very conclusive character; in fact, I think there is some reason to doubt if any of the products produced by artificial means are actually identical with the natural products. Even those bodies produced artificially, like benzoic or salicylic acid, which chemically approach so nearly to the bodies produced naturally as to be hardly distinguishable from them, appear to have not quite the same action medicinally. This is, of course, a very serious question for medical men, and in a subordinate way for pharmacists.

For instance, it is stated that benzoic acid and its salts, produced artificially from naphthaline, are not medicinally active, like the acid produced from gum. This may be due to the fact of the latter acid containing a large percentage of cinnamic acid, and it has been argued that it owes its medicinal activity to that acid. But cinnamic acid itself has been made artificially for some time, and this also is said to be inert. Further, the therapeutical action of resin benzoic acid has also been attributed to the empyreumatic compound which sublimes with the acid and imparts colour to it; but this too appears to have been disproved by some recent experiments in Germany.

Salicylic acid, again, I have myself some knowledge and experience of, and I find that in the opinion of many medical men there is an essential difference in the medicinal activity of the natural acid produced from wintergreen oil and of that produced artificially from carbolic acid. It is possible that this difference may be due to some trace of impurity still retained by the artificial acid, though I think I ought to mention that a very great improvement has taken place in the appearance and quality of the artificial acid since, in 1878, I pointed out the great difference which then existed between the acid made from carbolic acid and that produced from wintergreen oil.

Within the last few months my attention has been drawn to a new source of salicylic acid, namely, the oil of sweet birch (*Betula lenta*). This oil appears to be sometimes used as an adulterant of the true gaultheria oil. It seems to contain a large percentage of methyl salicylic acid, but without the peculiar terpene so characteristic of the true wintergreen oil. There are also other plants that have been reported to yield similar oils, and these appear worthy of [more] attention than they have yet received. For instance, about thirteen years since Mr. Broughton reported that he had examined an essential oil obtained from an Indian plant (*Andromeda Leschenaultii*), and found it to be almost identical with oil of wintergreen. So plentiful is this plant in the hill districts that Mr. Broughton seems to have seriously contemplated the utilisation of the essential oil in the economical manufacture of carbolic acid by the decomposition of the methylsalicylic acid contained in it. Shortly afterwards, Dr. De Vrij stated that whilst in Java he had obtained an almost identical oil from the leaves of *Gaultheria punctata* and *G. leucocarpa*. With respect to sweet birch oil, some experiments have already been made in the preparation of salicylic acid from it, but at present I am not in a position to say whether there is any difference between the medicinal activity of the product and of that obtained from oil of wintergreen. I am, however, endeavouring to obtain a supply of undoubtedly genuine birch oil, with which I hope to be able to decide whether there is any real difference between samples of salicylic acid produced from the two oils, or whether such difference as I have observed is simply due to some impurity in the oil I have been working with. I am also anxious to obtain samples of the oils from the sources mentioned by Mr. Broughton and Dr. De Vrij, as these would enable me to carry out a more complete series of comparative experiments.

Great and important as the question may be as to the possibility of the artificial production of organic principles which shall be chemically and medicinally identical with those formed naturally, it is only part of a still larger subject—the life-history of the plant or animal organism. This possesses great interest for all, and it must be admitted that a great deal has been done during the last few years to throw light upon this department of knowledge. But as, in order to constitute anything like conclusive evidence, numerous and extensive observations are indispensable, so the number of patient, painstaking, and at the same time accurate observers cannot be too great. As marking an important step in knowledge, I may allude to the researches lately instituted to determine the rate of absorption of water by a plant, which appear to prove that that rate is very much in proportion to the dryness of the surrounding atmosphere, and is regulated by the amount of evaporation from the surface of the leaves.

Another series of observations, made by Professor Sachs, also appear to me to be of very great interest, not only to the professed botanist, but very probably to the pharmacist. Professor Sachs has been engaged in the study of the rate of formation and disappearance of starch in the leaves of growing plants; and as the process for conducting these researches, unlike those for determining the amount of absorption of water by the living plant, is easy to carry out, and requires little or no apparatus, I think I may venture to describe it more in detail, as perhaps some present, especially those who reside in country districts, might be inclined to assist in this research by their own observations.

The leaf to be examined is first plunged into boiling water for about ten minutes, then taken out and digested in alcohol for about the same time (I find methylated spirit answers perfectly well). This treatment extracts the whole of the colouring matter (chlorophyll) and leaves the leaf perfectly

white. The leaf is now placed in an alcoholic solution of iodine, and the presence or absence of starch is demonstrated in a few minutes. The absorption of iodine commences at the edges, and soon colours the leaf blue-black if much starch be present, or brown if the quantity of starch be but small. The venation of the leaf appears as a pale network upon a dark ground, rendering it a very beautiful object; but all my efforts to preserve the specimen beyond a few hours have hitherto failed.

The curious and interesting information obtained from these researches is that the amount of starch present in the leaf of any given plant varies considerably under different circumstances. In direct sunshine, and under otherwise favourable circumstances, starch is formed very rapidly; but it generally disappears entirely during the night, so that a leaf collected in the evening will prove full of starch, while another leaf of the same plant collected before sunrise will not show a trace.

It is also an interesting fact, but one we should quite anticipate, that if the air surrounding the plant is deprived of its carbonic acid by means of caustic soda, no production of starch takes place, even in direct sunshine and with warmth and moisture that would under other conditions be sufficient.

Again, the gradual increase in the quantity of starch produced during the day, and under specified conditions, is a matter of great interest, as it would point to certain times and conditions when the plant would probably be more vigorous, and the activity of its medicinal principles greater, than at some other time. We already recognise the importance of plants intended for medicinal use being collected at certain periods of growth, but it is possible that we have still something to learn upon this subject.

I fear in these later days pharmacists have rather gone backward than forward in such knowledge. The apothecary, herbalist, or simpler of 200 years ago appears to have taken many and—to our modern way of thinking—some very foolish precautions in this matter. We now, I fear, practically take none, but rather leave everything to the knowledge and care of those who grow and supply such medicinal plants in a wholesale way. Perhaps the fact that some of our indigenous plants once held in high repute are now practically cast on one side may be due in some degree to the difference in the care and knowledge with which such plants have been collected. My learned predecessor in this chair, Professor Attfield, suggested, I think, that pharmacists should grow their own plants. I would not go as far as that, as I fear the results would even then not be satisfactory, either in a medicinal or pharmaceutical sense; still, if by any means we could add to our knowledge of the best mode of cultivation or collection of medicinal plants, we should be doing a service both to the public and ourselves.

By what means light affects the transformation of carbonic acid and water into starch is not known, although it is known that chlorophyll plays an important part in the reaction. But the influence of light in producing chemical change and combination is at once one of the most wonderful and inexplicable of phenomena. Photography has popularised this subject, though I need not venture to dilate upon that most fascinating art, for we constantly find the influence of light in chemical reactions of still nearer interest to the pharmacist.

A few years ago a demand arose for dichloride of ethidene. Unfortunately, this demand came in the winter, when little light—sunlight especially—was available in England. The compound is produced by the combination of chlorine with chloride of ethyl, both in the gaseous state, but the action can only be started or maintained under the influence of sunlight. Consequently, on dark, cloudy, or foggy days it has been impossible to continue the manufacture of the compound. This is one of many instances which might be mentioned in which light proves itself to be of active and positive use to the chemist. And it is possible that in the future many other reactions will be conducted under its influence. Last, but not least, light is the great disinfectant.

Probably the most striking chemical, or rather I suppose I should say physical, results that have been obtained in recent years have been those following upon the many and startling experiments on gases conducted under immense pressure and at very low temperatures. In these experiments advantage is taken of the fact that certain liquids boil at very low temperatures, especially when in vacuo, and obviously in becoming converted into vapour take up heat from surrounding matter

to a large extent. In fact, working under these conditions with liquid carbonic anhydride and liquid ethylene (the chief illuminating agent of ordinary coal gas), such temperatures as -80° to -115° C., or even -140° C., have been arrived at, and it is asserted that as low as -200° C. has been reached by allowing liquid oxygen to boil in vacuo. In a lecture lately delivered at the Royal Institution, Professor Dewar exhibited alcohol in a gelatinous condition, and bisulphide of carbon in a solid state, and was even able to show to a few of those present liquid oxygen. Even in the short interval since then the manipulation has been very much simplified and brought within the range of an ordinary laboratory operation. M. Cailletet has announced that marsh gas, under only a slight pressure, if submitted to the refrigerating influence of ethylene boiling at ordinary atmospheric pressure, is converted into a liquid that in vaporising produces a degree of cold in which oxygen is at once liquefied, without the necessity for elaborate apparatus for submitting it to pressure.

It is with almost a feeling of regret that we hear of the results of these extraordinary experiments. Probably we have all agreed in a general way that at some temperature or under some pressure the so-called permanent gases would become either liquids or even solids; but it is almost startling to find the thing done, and our old refractory friends brought down to the level of ordinary matter. It is also interesting to mark how near the normal temperature appears to be to that temperature at which such a gas as oxygen becomes a liquid or even a solid; for -200° C. seems but a little way down if we compare it with $+200^{\circ}$ C. Even at $+2,000^{\circ}$ C., which is a temperature we can certainly reach, many of our most familiar elements and compounds would not liquefy, while as to the temperature at which, say, iron or platinum becomes gaseous, we must turn to the astronomer, who will tell us of temperatures in the sun many hundred times higher than the highest point we can ever expect to reach by our ordinary means upon the surface of this earth. Considering this great distance between the extremes of known temperatures, it does strike one with something like astonishment to remember that life, both vegetable and animal, is pretty nearly limited to the comparatively small range of temperature within which albumen and protein, and such compounds generally, are capable of existing without coagulation or change of physical properties—say, between zero and 75° C.—certainly not far beyond these limits. I say it does somewhat startle one to find that we are existing as it were nearly at the bottom of the heat range, and that matter, even in the form of such gases as oxygen and nitrogen—in other words the very atmosphere we breathe—would by a reduction of temperature, comparatively small as compared with the high temperatures known to exist, become solid matter. However much we may have been prepared to admit the possibility of such a state of things, we are hardly prepared to find it so close to our elbows.

This liquefaction and solidification of some of the gases is likely to prove of great practical use, both to pharmacists and chemists and to the public generally. Anhydrous sulphurous acid gas readily condenses under a pressure of about three atmospheres to a liquid, and in this state can be put up into syphon-vases to be drawn upon as required. This method is, I understand, coming into considerable use with brewers and others, who use the gas for checking fermentation. To the pharmacist it will probably prove a very handy and useful mode of keeping the acid, rather than in the form of a solution, in which condition sulphurous acid is liable to oxidise and spoil, whilst solutions, either in water or alcohol, can be readily prepared from the liquid acid as required.

Carbonic anhydride, also in the liquid state, is now being supplied in strong cylinders, and is coming into use, I understand, for charging beer, wine, &c., with carbonic acid gas. Further, it is said that in Berlin the snow-like solid carbonic acid, with which most here are familiar, is brought into a more compact form by placing it in cylinders and subjecting it to great pressure. Under this treatment the acid becomes hard and brittle, something like marble in appearance, in which condition it might be handed round at a dinner-table, and each guest chipping off a portion could effectually, not only cool his wine, but at the same time charge it with the agreeable carbonic acid. I do not know if the price at which the liquid acid can be produced can be brought down to suit the makers of aerated waters; if so, it may prove a very con-

venient and useful invention to many pharmacists, who only require to make small quantities of lithia, potash, or other medicated waters.

Although somewhat beyond the usual range of subjects immediately interesting to pharmacists, we cannot but recognise the vast importance of the researches and enormous advances science is making in the detection of the probable causes of zymotic diseases. To Pasteur in France, to Koch in Germany, and to Klein and others in England, much is due, and we look for a further development of their researches with profound interest. It is not by any means improbable that one of the ultimate results of these researches may be to make great changes in the application of remedies to the classes of disease alluded to. And pharmacists may be called upon to undertake the preparation of remedies possibly of a character at present little thought of, at any rate in England. For instance, on the Continent, oxygen is now administered as a gas in certain forms of disease. Already, too, the preparation of vaccine for sale to farmers as a prophylactic against *charbon*, or splenic fever, in sheep is carried out on commercial principles in France, and it is quite possible that a vaccine against hydrophobia may soon be in the market. There is no doubt also that the introduction of new disinfecting and antiseptic agents is likely to receive greater attention in the future than it has ever in the past, important as the subject is already acknowledged to be. I imagine a great future is still in store for the production and utilisation of articles of this nature, a subject which must be of the greatest interest to the pharmacist as well as to the medical man and sanitary inspector.

The last year has also been distinguished by a development of peculiar interest to pharmacists. I allude to the production of several Pharmacopœias. Indeed, it is curious, but not unnatural, that in the great centres of civilisation throughout the world the same feeling appears to have prevailed, namely, that the national Pharmacopœias of the various States required revision—that the old ones were unsatisfactory, and not up to the mark required by modern medical science.

New Pharmacopœias have accordingly appeared in America, Germany, and France, and it is no secret that England is to be favoured with a new Pharmacopœia shortly. It is not my intention to enter into any critical examination of these works. I rather allude to them as proving the great and living interest taken at the present time in matters pharmaceutical. Excellent articles, with copious extracts, have appeared in the *Pharmaceutical Journal* and elsewhere, giving a good idea of the nature of the contents of these works to those who have not had time or opportunity of studying the originals. As these works emanate from countries very distinct in social and intellectual conditions, so we find in them marked differences in the treatment and manipulation of drugs and chemicals. Probably from our own peculiar standpoint we can find fault with some details in all these works, but, taking them as a whole, I think there can be no question that a great advance is shown. I trust that when our new national Pharmacopœia appears, we shall be able to congratulate the compilers of that work in a similar way; but we naturally feel anxious, and should be glad if we had some guarantee that the practical part will be as completely done, as there is no doubt the theoretical part is sure to be. Speaking generally of the three works referred to, the American Pharmacopœia might be described as too diffuse, the German as too scientific, and the French as too special; but there is no doubt that from each many valuable hints and processes can be obtained. The question of the admission of new remedies into national Pharmacopœias, and the exclusion of old remedies that have become obsolete, requires great caution and consideration. It is quite proper that a new and useful remedy should be added as soon as possible to a national Pharmacopœia, so as to define its strength, properties, &c. But experience teaches us that many remedies introduced fail from some cause to justify their inclusion in such a work, and it therefore follows that the lapse of sufficient time must be permitted before the final position of a new remedy can be settled. There is also a difficulty in removing an old remedy, which ought to be borne in mind. The influence of a Pharmacopœia is not only felt in its own country, but frequently far away also, as many of the more distant centres and colonies accept the articles authorised in a European Pharmacopœia, and continue to use

them long after their popularity has waned at home. I was struck a short time back by a remark by the editor of the *Pharmaceutical Journal* respecting the retention of kermes mineral in the new French Codex. It is true that that particular preparation is but seldom prescribed now, I suppose I may say in France, certainly very seldom in England. Still, it is in large demand in South America, where the French Codex is accepted as an authority, and I am sorry to say the British Pharmacopœia is not. Bearing in mind also that a Pharmacopœia is often appealed to in courts of law, it is of great importance that both additions and withdrawals should be effected with great discretion, as frequently questions may arise which will give rise to great trouble and confusion in the legal mind.

This leads me to allude to what is really a most important function of the modern Pharmacopœia. I allude to the tests for the quality of drugs and the purity of chemicals which it may contain. It is admitted by all that the greatest care and attention should be given to matters of this kind, but some judgment and discretion must be shown. If the description of a drug be based upon a rare and almost unique specimen, it is obvious that it will be impossible to maintain such a standard of quality in the ordinary course of pharmaceutical practice. So, too, if the tests given for a chemical preparation are so refined as not to make allowance for obvious and practically non-important impurities, great and unnecessary increase of cost might have to be incurred in the preparation of such articles without a corresponding advantage to the public. I was pleased to find that this point had not been lost sight of in the new French Codex, where impurity and adulteration are separated and treated apart. To give one instance, cream of tartar is described as containing tartrate of lime as an impurity; but silica, alum, &c., are mentioned as adulterants, and not to be permitted. This, I think, is a sensible and proper plan. All natural cream of tartar must contain a certain percentage of the lime salt. If it is required free from lime salt it must be prepared from tartaric acid, and the product must of necessity be far more costly, although no better for medicinal purposes. Under such a definition as that in the Codex no magistrate or justice would convict a chemist for selling a natural cream of tartar as an adulterated article; whereas the adoption of strict chemical tests only, without any allusion to natural impurities as such, might lead to inconveniences such as, I am afraid, have before now resulted from the British Pharmacopœia not having recognised facts, although distinctly describing the ordinary natural article as the officinal preparation.

This brings me naturally to the question of the proper system under which a new British Pharmacopœia should be compiled, to which subject permit me to claim your attention for a short time. That a new Pharmacopœia is required is agreed upon by all, and we understand that the general Medical Council, which is the body at present entrusted by law with the responsibility of the production of the work, is engaged in, or has given directions for, its production in due course. I may also remind you that we, as pharmacists, have put forward a very strong claim to be officially recognised and to be permitted to take our share in the responsibilities of the production of this most important work. We claim the position on many grounds, and it has appeared to me unaccountable that our claim has not been cordially responded to, both by the Government and the medical authorities. One, and I would say a foremost, ground for our making this claim is that we are a branch—although admittedly a humble one—of the great profession of healing, and that our special branch of that profession is exactly that concerned in the production of a national Pharmacopœia. Not only is this our special province, but we claim it also on account of our special knowledge. I do believe and assert that pharmacists as a body know more about the best modes—or I may say the practical niceties—involved in the preparation of medicines than any other body of men in the country. And I would even go so far as to affirm that they are better acquainted with the science of the subject—as far, at any rate, as the practical application of science to pharmacy is concerned. Again, we claim the position of being officially recognised in the production of a national Pharmacopœia, and most strongly insist upon this as a right, upon the ground that the national Pharmacopœia is a work of legal authority; that we are bound by its provisions, and are liable to suffer pains and penalties unless we follow the

details given as to quality, practice, and purity of the drugs, preparations, and chemicals. We have a right to be officially consulted upon these matters of detail, so as, if possible, to avoid the introduction of vexatious or impossible formulae or conditions. We claim, further, that we ought to have a voice in framing the laws under which we are to be judged; for let it not be forgotten that the Pharmacopeia is in effect a code of law, which must be obeyed, even if wrong or unreasonable, or the pharmacist must expect to lose both in pocket and reputation.

I have said that the non-recognition of our claim to the position to which we consider we are entitled in this matter has appeared to me unaccountable. I fear I must withdraw that expression, or, at any rate, attempt to account for the unaccountable. I have had many opportunities of speaking upon this subject to influential men of various positions both in the medical and the general world, and the expression of opinion has been one of surprise that pharmacists are not already entrusted with a share in the production of the Pharmacopœia. Among the many members of the medical profession to whom I have spoken, I have not found one who professed to see any reason why we should not be entrusted with our proper share of the work, whilst many have expressed a strong opinion that we ought to take an active part in it. As for members of the general public, they are simply bewildered if they think upon the matter at all; but, as far as my experience has gone, all, without exception, have been favourable to the claim we make. Still it is noteworthy that we do not get what we ask, and it is pretty evident, to my mind, at least, that notwithstanding all that has been done to move the Government in our favour, some greater influence has succeeded in neutralising our endeavours to obtain the assistance of the Government in establishing by law our reasonable claims, and I am forced to the conclusion that it is an unwillingness in certain quarters to recognise pharmacists, even in a *quasi-professional* sense, that lies at the root of this matter. We are tradesmen, and it appears that, therefore, notwithstanding any amount of education, training, or examination to which we may submit, we are not to receive the recognition which is strictly and justly our due. If this is indeed the explanation of the matter, I can only say it increases my wonder. In no other country does the keeping of an open shop prevent a pharmacist from taking his proper place, side by side with the medical practitioner, and, in fact, becoming his essential adjunct. In most countries, indeed, the pharmacist (or apothecary) is the only legally-recognised dispenser of medicine, the practice of pharmacy being jealously restricted to those who have made a special study of the subject, and not permitted to be exercised by those only possessing the very general knowledge acquired by students who have to devote the greatest amount of their time to other and more special branches of medical knowledge.

I cannot conclude without alluding to the subject of an International Pharmacopœia. More than once in years gone by this subject has been brought forward at the meetings of the International Pharmaceutical Congress, and especially on the occasion when we had the honour and great pleasure of receiving the Congress in London. It is also announced that the subject will again form a principal topic of discussion at the forthcoming meeting of the Congress in Brussels.

At the Congress in London all were agreed that a great necessity existed for the creation or compilation of such a work; but it must be admitted that very little progress appears yet to have been made towards settling the very important question as to its extent and scope. I am aware that an influential committee was appointed to take these matters into consideration, and to report to the next meeting of the Congress. We shall all, I am sure, wait with great interest the result at which this committee may arrive, and hope that a solution will be found of some of the important, and not easily reconcilable, questions which are involved in the attempt. I trust, however, the committee will bear in mind that by attempting too much at once it will court failure, whilst by limiting the number and nature of the articles proposed to be included in the work to a few special articles, a much greater chance of a general acceptance of the scheme will be secured. We might then hope to see, even in our time, a general agreement arrived at between all nations as to the strength standards of such articles as opium preparations, hydrocyanic acid, and such compounds, which are

of universal use in medicine, and the uniformity in the strength of which, as a protection to the general safety of the public, needs no argument. Years ago, this necessity was not nearly so real; but in these days, when the public generally travel so continuously, and to such various distant countries, uniformity is not only desirable, but absolutely necessary, if we would escape the certainty of distressing accidents continually occurring. Although, therefore, the question of the settlement of an international pharmacopœia in a spirit of wisdom and sound sense is, to us in England, second in importance to that of our national work, it still must possess the highest interest for all who look upon pharmacy as a profession instituted not entirely for the benefit of those who practise it, but also for the good of the community.

Mr. ROSSITER, in proposing a vote of thanks to the President for his admirable and instructive address, said Mr. Williams's great reputation as an accomplished pharmacist and his knowledge of scientific preparations had led them all to look forward with more than ordinary interest to that address, and he might say that it had been listened to with more than ordinary interest. (Applause.) From beginning to end they had been interested in the very highest degree with the references to the numerous preparations which their worthy President had introduced, and the latter part of the address, which more especially concerned pharmaceutists in relation to the medical profession, had been of very great interest, and was one which might easily have caused a very considerable discussion.

Mr. A. J. Josephs, of St. Leonards, seconded the vote of thanks, which was very cordially given.

The reading of papers was commenced with

REPORT ON ENGLISH RHUBARB.—ANALYSIS OF ENGLISH RHUBARB.

By W. Elborne, Assistant Lecturer on Materia Medica and Pharmacy, Owens College.

THESE papers were the result of an investigation undertaken for the Conference. The author gave full botanical, chemical, and microscopic details, and showed samples of *Rheum officinale* and *Rheum rhabonticum*, of English growth, both "ordinary cultivated" and "highly cultivated," and the characters of these were compared with each other and with those of Russian and East Indian rhubarbs. It would be impossible to give an abstract of all these details. The cultivation of rhubarb in this country dates back to 1608, and until 1876 it was produced only by *R. rhabonticum* and, perhaps, *R. undulatum*. But of late *R. officinale* has been cultivated. This was introduced in 1867 by Hanbury as a source of the true Asiatic rhubarb. The marked characteristic of *R. officinale* is the strong development of the root-stock, which projects conically above ground. This is grown by Mr. Usher, at Bodicote, and Professor Flückiger has expressed the opinion that the root grown by him agrees in every way with the Chinese drug, except that the latter is somewhat finer coloured. Mr. Usher has found that by forcing the cultivation the medicinal activity of the root deteriorates. The roots take five to seven years to mature. They are dug up in dry weather between July and September, exposed to a current of air for a few days, and afterwards dried by artificial heat, having been first cut into flats and rounds. Pieces of English rhubarb are throughout traversed by longitudinal veins, and thus differ from the fine net-veined markings of East India root. A little hole is bored through each piece, not to imitate the Russian root, but to see if it is sound. The English root yields a duller powder, is gritty when chewed, and on fracture blackish veins imbedded in whitish parenchyma are seen. The latter characteristic distinguishes *R. officinale* from *R. rhabonticum*. Chemically, Mr. Elborne found *R. officinale* to contain 3·5 per cent. of cathartic acid, 14·3 of chrysophanic acid, and tannin, 2·6 of resinous substances, and 6·5 of mucilage. Highly-cultivated *R. officinale* and *R. rhabonticum* contained rather less of the active properties, while East Indian root gave 4·5 per cent. of cathartic acid,

11·7 of chrysophan and tannin, 4·6 of resinous matter, and 4·0 of mucilage.

About 8,000 lbs. of English rhubarb are produced annually, and only by Messrs. R. Usher & Son. Nearly half of that product is exported.

The discussion was commenced by

Mr. HOLMES, who said that Mr. Elborne had told them that the rhubarb was cultivated in two forms, viz.: the ordinary, cultivated under ordinary circumstances; and the other, highly manured; and he pointed out that the highly-cultivated was not so valuable as the ordinary rhubarb. They ought to have some means of distinguishing these varieties, and he would like to know how they were to recognise the different varieties in commerce. Mr. Elborne also mentioned that the *officinale* had dark veins, and was distinguishable from the fresh root of the *rhoponticum*; and he wished to know whether the veins remained equally dark in the dry root of the *officinale*. With regard to the Russian rhubarb, since 1860 it had not been imported. The large amount of moisture in the specimen of Russian rhubarb was owing to the fact that it had been kept for years in a room that was not dry. With regard to the deduction drawn from the comparative analysis, they could not yet accept the results obtained, and for this reason—that East Indian rhubarb was known to vary exceedingly. Some pieces were very hard and resinous, which were selected for the manufacture of so-called Russian rhubarb; and other pieces were light and spongy, but varied in amount of resin and extractive matter. And, therefore, to arrive at a really valuable result, they must take a piece hard and resinous and another soft and spongy, and draw a mean between the two.

Mr. PLOWMAN observed that Mr. Elborne had submitted a great number of valuable facts; but as the grant was made to determine the comparative value of commercial rhubarbs, he would ask Mr. Elborne whether he deduced anything from these facts as to which of the rhubarbs would be best for medicinal purposes, and which had the most therapeutic value. He should hardly suppose that Mr. Elborne would be able to draw those deductions, but still he would like to know whether he had any opinions on the subject.

Mr. BORLAND said that Mr. Elborne informed them that in drying the rhubarbs by the application of artificial heat, one variety was injured by an increase of 10°. It seemed remarkable that such a small variation in temperature should produce that effect.

Mr. GREENISH would like to know whether the therapeutic value corresponded with what Mr. Elborne found from a chemical point of view.

Mr. DOTT asked whether the active principle in rhubarb was chrysophanic acid or chrysarobin. Professor Attfield had found that in the goat powder chrysophanic acid was the active principle, but the German chemists, Lieberman and Leidtler, contradicted that, and said that it was chrysarobin, which was different from chrysophanic acid.

Mr. SCHACHT said that while he should like Mr. Elborne to answer every question that bore upon the physics, cultivation, and commerce, and so forth, he should not like him to answer any question as to the therapeutic value of any portion of the subject. There was a class of investigation which correctly and advantageously pertained to pharmacists, and another which did not, because they had not the training or requisite skill to enter into such investigations properly.

Mr. ELBORNE, in reply, said Mr. Schacht had asked him not to go into the question of therapeutics of medicinal rhubarb. The title of his paper was intended to be "The Comparative Value of English Commercial Rhubarb," and he had explained in the latter part of his paper that he did not wish to go into therapeutics: that, "while English rhubarbs yielded apparently very good tinctures, the report from the medical profession of their therapeutic qualities can alone determine their legitimate use and pharmacy."

Mr. GREENISH explained that it was not his intention that Mr. Elborne should go into the therapeutical question, but that the matter should be placed in the hands of medical men to determine the therapeutical value.

Mr. ELBORNE said it was the intention of Dr. Leach, the Professor of Materia Medica at Owen's College, to ascertain their therapeutic value. Mr. Holmes wished to know whether there was any good distinction between the *Rheum officinale* as ordinarily cultivated and the highly cultivated; and whether these two were different from *Rheum rhabonticum*. There was a characteristic difference between the *Rheum officinale* and the *Rheum rhabonticum*: the fracture of the former being comparatively black, as compared with the *rhabonticum*, which was red. The distinction between the two varieties of *officinale* was much more difficult. If a careful fracture were made of the two rhubarbs—the ordinary cultivated and the highly cultivated—it would be found that the highly cultivated was much more spongy than in the *officinale* ordinarily cultivated, which had had a long time to grow. With reference to the excessive amount of moisture in Russian rhubarb, Mr. Holmes' remarks accounted very well for its presence. For his own part, he was much surprised to find 12 per cent. of moisture in what appeared to be a very good sound piece of Russian rhubarb. It was very solid indeed, and the fact that it had been kept a number of years in a damp place by Dr. O'Leary accounted for that. With reference to the chemical composition of these rhubarbs, he originally intended to have made a complete analysis of each

of those varieties, but time would not admit of it, and, therefore, he confined himself to estimating what were considered the more important constituents. Mr. Plowman had reminded him that the intended title of his paper should have been the comparative value of rhubarb, but he could not go into the therapeutic properties of the rhubarbs. A question had been asked about chrysophanic acid, but he might say that rhubarb did not contain chrysophanic acid in its free state, but it contained chrysophan, which was in some manner closely related to chrysophanic acid. He was not able to answer Mr. Dott's question as to whether the active principle in rhubarb was chrysophanic acid or chrysarobin.

The PRESIDENT remarked that as to the drying of rhubarb it reminded him of a curious process for drying gunpowder, and which was now being used by our own Government. The gunpowder was enclosed in vessels with anhydrous chloride of calcium, and it dried in a much more satisfactory manner than by the ordinary means. It struck him that the same process might be applied to rhubarb, where they wished to dry slowly and without the influence of ether.

Mr. ELBORNE said the process of drying was a very difficult operation, and the rhubarb had to be exposed at a temperature of 90° at least six weeks. If rhubarb were sliced into small pieces, that would facilitate the operation; but whether it would be then accepted in commerce he did not know.

The three following papers were then read:—

FINAL REPORT ON THE ALKALOIDAL VALUE OF CULTIVATED AND WILD BELLADONNA.

By A. W. GERRARD, F.C.S.

IN previous reports, from a limited number of analyses, it had been shown that wild belladonna was the richest in alkaloid, also that the plant of both kinds was most active at the time of flowering.

The above results requiring confirmation, and further analysis being desirable of the second, third, and fourth years' growth of belladonna, these were undertaken. The cultivated plants were obtained from Mr. Ransom, of Hitchin, Mr. Holland, of Market Deeping, and other growers; the wild plant was collected by the author in Sussex, Surrey, Warwickshire, and Yorkshire. All plants were in the flowering stage and of average growth.

The method of examination was to take the leaf and root in fine powder dried at 100°–105° F., and prepare an alcoholic extract; this extract was dissolved in water, and the solution treated with ammonia and ether.

The ether was now removed and shaken with acetic acid; the acetic acid solution treated with ammonia and again with ether; the ether on withdrawal gave the alkaloid as a crystalline residue.

The amount of alkaloid was found volumetrically, by means of a dilute sulphuric acid, 100 c.c. of which exactly equals or neutralises 1 grammie of atropine. This process, which had been subjected to a check operation, is easy of application and accurate in result.

Thirty-nine analyses were made of root and leaf, and with one exception the alkaloid was found most abundantly in the leaf; and the wild plant gave the largest proportion, thus confirming previous work. A recumbent variety of belladonna, first noticed by Mr. E. M. Holmes, was examined and found to give the average yield of alkaloid. The author's conclusions from his experiments and these bearings are as follows:—

1. Wild grown belladonna contains a larger quantity of alkaloid than the cultivated kind, but the difference is not so great as to make any material difference which variety is used in making pharmaceutical preparations; nevertheless, for uniformity's sake the cultivated only should be used, the wild being retained for making atropine.

2. The leaves, without exception, have been found to yield the highest percentage of alkaloid; following these the root, fruit, and stem is the order of sequence. From this observation it would seem that preparations of the leaf should supersede those of the root, but when we consider the great strength of the liniment of belladonna, the only official preparation made from the root, its comparative cleanliness, and the general satisfaction it gives the medical profession, there is no good reason to advocate a change. The expediency of introducing an alcoholic extract of the leaves into the B.P. will be generally acknowledged, for such an extract is occasionally required in most dispensing establishments, for making belladonna suppositories, and it certainly would

supersede with advantage, in belladonna plaster, the extract made by the sadly unskilful process now official.

3. It was shown in a previous communication that the first year's growth of belladonna is a small plant, unworthy of collection, containing but little alkaloid; from the second to the fourth year the quantity is fairly uniform. At these ages then, and at the period of flowering, is the best time for collecting the plants.

4. From an examination of the roots collected in spring, summer, and autumn, it was found that they contained about the same amount of alkaloid, so that the process of leafing and flowering does not exhaust the roots of alkaloid, but the experiment shows there is a simultaneous development of root and leaf; therefore the roots may be gathered at the same time as the leaves.

REPORT UPON THE ESTIMATION OF THE ALKALOIDS IN ATROPA BELLADONNA.

By Wyndham R. Dunstan and Francis Ransom.

THIS report summarises results already published. It is found that percolation with a hot mixture of equal volumes of chloroform and absolute alcohol extracts the alkaloids from belladonna root, with but little impurity. Shaking the percolate with water yields an aqueous solution of the alkaloidal salts, leaving the colouring matter in the chloroform. On the addition of ammonia and chloroform to the aqueous solution a nearly pure solution of the alkaloids in chloroform is obtained. Further experiments have been made on the extraction of the salts of the alkaloids from belladonna leaves. Great difficulties have been met with, and the results are not ripe for publication.

A FEW NOTES ON THE GROWTH OF BELLADONNA AND HYOSCYAMUS.

By T. J. Hasselby.

THE author had followed the suggestions of Mr. Gerrard and Dr. Attfield, and had grown some belladonna and hyoscyamus in a small garden of about 60 square yards area. He found some difficulty in obtaining plants or seeds. The belladonna was ultimately obtained from North Yorkshire, and the ripe berries sown under the shade of a south brick-wall. A year ago last spring, a number of seedlings appeared, grew about a foot high, and died down on the approach of winter. This spring, when they appeared, they were dusted with slaked lime which had absorbed carbonic acid, and a top dressing of Clay's chemical manure was applied. They are now 4 feet high, and are bearing flowers. The appearance of the plants was described as pleasant.

Hyoscyamus had proved more difficult. Some seeds would not germinate, and slugs destroyed those plants that came up. They will not touch belladonna. Some more seed was supplied by Professor Bentley and Mr. Baker, of Kew, and both have germinated. Some of the Professor's seedlings are now a foot high. Their medicinal value remains to be tested.

At the close of the reading of the papers, Mr. BELL said he should be glad to have specimens of the plant, and he should give the results of his own observation of their growth next year.

Mr. ATKINS said a very large amount of practical experiment was yet to be made with the wild and cultivated plant; and they must, when they took plants from the field, study far more thoughtfully than they had done the elements which went to the production of the plant-life. Some plants were differently affected by the morning and evening sun.

Mr. SCHACHT said the value of such a communication as Mr. Gerrard and others gave them lay essentially in the accuracy of the results which were given. He did not want to impute inaccuracy to Mr. Gerrard, but as the process which he adopted for estimating the alkaloids was not universally admitted to be the most accurate, he would ask Mr. Gerrard whether he had systematically compared the results with corresponding experiments carried on under other processes. It would satisfy them to know that the plan adopted would lead to absolute accuracy.

Mr. GREENISH said it was extremely interesting to hear from Mr. Gerrard that he had found more of the active principles of belladonna in the leaves than in the root. It seemed to him that they would have to return to the leaf again instead of using the root. If the root was not the best, why should they use it for making any preparation, for the leaves could be obtained more readily and in greater quantity than the root? With regard

the cultivation of medicinal plants, he knew that it was difficult to determine what was meant by cultivation. But garden cultivation had

very important influence on many medicinal plants, and the active principle of some plants was almost entirely eliminated by garden cultivation.

The PRESIDENT: Do you consider garden cultivation injurious?

Mr. GREENISH: I would not say injurious, but I say that the active principle found in the plant in the wild state is frequently almost entirely eliminated by garden cultivation—I would say continuous garden cultivation, as distinguished from taking a wild plant from its habitat and planting it in the garden.

Professor REDWOOD said, with reference to the relative advantage of the use of the root or of the leaf in cases such as those indicated, where both were available, he thought it was important that experiments should be carried further than had been yet done as to the relative permanence of the activity of the different forms of the plant life. They had reason to believe that the leaf was much more liable to undergo deterioration in keeping than the root. Certain constituents which were present—the chlorophyll especially—was of a very changeable nature; and he should like to know what was the permanence of the activity of the leaf which had been kept as compared with that of the root under similar circumstances. This had a hearing on the consideration of the question before them, inasmuch as the root, if it retained the activity more permanently, would afford the means of getting the preparations at different periods of the year, which the leaf would not to the same extent afford. Therefore there were experiments which had to be made, indicating what length of time the leaf could be kept, whether the leaf admitted of being dried, and whether it retained its activity in the dry form and after retention for some length of time, and what the condition of the root was under similar circumstances. With reference to the influence of cultivation upon the activity of those plants, he might mention what came under his own observation and experience. Within the last two or three years he had had some experience with reference to the cultivation in his own garden of asparagus. He had a gardener who was not very scientific, and who had very strong opinions of his own, and he said that the asparagus required to be well salted. He agreed with his gardener, and he ordered a ton of salt, having ascertained that it could be got cheaper by taking a large quantity. The gardener applied the salt, with the result that the asparagus entirely disappeared, and the roots on being dug were shown to have been killed. The moral to be drawn from this was that they might carry cultivation a degree too far.

Mr. COOKE said, as to the permanence of the leaf and root of different plants, his experience was that there was comparatively very little difference. There was not much difficulty in properly securing the leaf or root. The leaves should be dried as rapidly as possible. The root would stand much rougher treatment, and that might account for the difference found in the medicinal virtues of the different species apart from the plant. Where the leaf was properly dried it gave a most efficient result.

Mr. BOTTLE was rather impressed by the remark of Mr. Gerrard as to the larger percentage of alkaloid in belladonna in London as compared with that in the country. Different soils and atmospheres produced a great difference in the development of plant life, and he should like to know whether it had been grown under the electric light, because that might have an effect on plant life.

Mr. HOLMES observed that Mr. Gerrard's paper brought out one very interesting point relating to cultivation, and that was that the root could not be divided with profit. Mr. Gerrard also said that the leaf was as rich as the root in alkaloid. Then he said that there seemed to be no good reason for the disuse of the root for the liniment. He could not agree with Mr. Gerrard in that; and, for his own part, he could not get a good specimen of the belladonna root, and he knew there would be great difficulty in getting it. The leaf well dried would be better than the root itself. With regard to henbane, it was adulterated with kiln-dried seed, and in buying henbane seed they could not be sure whether it was from India or grown in this country.

Mr. MANTINDALE said the preparation from roots was far cleaner than from leaves. The chlorophyll in the leaves would make it a dirty preparation; and for pharmaceutical preparations they might employ both leaves and roots economically.

Mr. GERRARD, in reply, said he should like to ask Mr. Hasselby whether he was able to distinguish in any way the plants of henbane which grew in his garden, as regarded their being annual or biennial.

Mr. HASSELBY said that he had noticed a difference.

Mr. GERRARD observed that he had 3 acres of henbane under cultivation this year, and he had come to the conclusion that there were either three varieties of henbane or a hybrid variety; but he hoped before another year to be able to clear up the matter. It was very difficult to distinguish between annual and biennial henbane. There were as many flowers on the so-called biennial variety of a yellow as of a purple colour, and he could not possibly distinguish them as regarded colour. Mr. Hasselby had asked the difference between the cultivated and wild plants. The wild plant was a self-sown plant, and if they took the seed from that plant after having grown for a long time in one locality, and placed it under cultivation, it would be found not to be so hardy in growth, and would require more care and attention. The only way to make out the difference between the annual and biennial henbane was to work out the percentage of alkaloid. It would not pay a person to grow annual henbane when he could grow what was called biennial: the one was prolific and the other was stunted

with very little weight and very little leaf. As to the process of indicating alkaloid, he considered the old-fashioned tincture of litmus was the best indicator. In reply to Mr. Schacht, he might say that he used ether as the solvent, and the results in his paper might be taken as fairly accurate. Professor Redwood believed that the leaf would deteriorate more by keeping than the root. His own experience was that the leaf deteriorated more rapidly than the root, for belladonna leaf, unless carefully preserved, would in the course of one or two years lose almost the whole of its activity. He had purchased the belladonna leaf of commerce, and he could not say that it was of great quality, for he had found it to yield scarcely any atropine. He thought there was an opening for pharmacists to take upon themselves the cultivation of these medicinal herbs, and if they let the leaves dry rapidly they would get better belladonna and henbane leaves than they got at present.

REPORT UPON AN INVESTIGATION OF THE CHEMISTRY, BOTANY, AND PHARMACY OF THE STRYCHNOS NUX-VOMICA.

By Wyndham R. Dunstan and F. W. Short.

THIS paper presented an historical summary of the investigations in which the authors have been engaged since 1882. No new unpublished facts were communicated. So far as concerns the investigation of the commercial preparations, the research was endowed by the Conference. Nine papers have been published at intervals since the beginning of 1883, elucidating the following points:—(1) A simple and accurate process for the extraction and estimation of the total alkaloidal constituents of strychnos nux-vomica; (2) the discovery by analysis of authentic specimens whether the alkaloidal content of the different seeds was subject to much variation; (3) the quantitative separation of the alkaloids strychnine and brucine by a simple and accurate process; (4) the chemical and botanical analysis of the whole plant in order to see whether the alkaloidal content was in any way connected with distinct botanical characteristics; (5) a complete chemical examination of the galenical preparations of nux-vomica that are found in commerce; (6) to devise processes for the production of standard galenical preparations, whereby the therapeutical action of this preparation shall be rendered as far as possible definite.

The PRESIDENT expressed regret at the absence of Messrs. Dunstan and Short, who had given them a most interesting paper. The discussion of that paper would be taken along with Mr. Schacht's and Mr. Dott's papers.

ANALYTICAL NOTES ON HYDROCYANIC ACID.

By Louis Siebold.

THE author refers to the serious error, previously pointed out by him, resulting from the use of an insufficient amount of alkali, in the volumetric estimation of hydrocyanic acid by Liebig's process, and criticises the suggestions made by Dr. Senier and Mr. MacEwan with the object of avoiding this error. As the safest means of obtaining perfectly trustworthy results, he recommends a first or preliminary titration to be made in the presence of a very decided excess of standard normal soda solution; and having thus approximately ascertained the amount of hydrocyanic acid present, and by calculation also that of the standard soda required, recommends a second estimation to be made in the presence of only a slight excess of alkali over and above the proportion found in the first experiment. This suffices for the conversion of the acid into sodium cyanide. In this manner a scientifically exact result is obtained. With regard to the process of the United States Pharmacopœia, the author confirms his statement, made at last year's meeting of the Conference, as to the accuracy of this method, but insists on the necessity of this titration being performed rapidly, so as to prevent loss of H₂C₂O by evaporation during the process. It is best to run the acid from the pipette on the excess of magnesia and a small quantity of indicator (potassium chromate) contained in the beaker, then to add the silver solution from the burette in a thin stream until the end is nearly reached, and then to complete the reaction by adding the remainder of the silver solution drop by drop. He further shows that, if the same precautions be adopted, the carbonates of magnesium, calcium, and barium can be substituted in this process for the magnesium hydrate, and that this holds true, not only of the

carbonates obtained by precipitation, but also of the corresponding native minerals, such as calc-spar, magnesite, &c. The author does not recommend these substances to be used in the place of magnesia, but merely wishes to record as an interesting fact that a body of such extremely weak acid properties as hydrocyanic acid, which by itself is without action on these minerals, can be made to decompose them completely, and even without heat, by the intervention of silver nitrate. In conclusion, he again lays stress on the absence of hydrochloric acid and chlorides as an absolute condition in the American process of estimating this acid.

The PRESIDENT considered that Mr. Siebold had overcome a great difficulty, and that his process of using the double cyanide would give results of the greatest possible accuracy.

Mr. NAYLOR asked what was the objection to the mercuric chloride test. His experience was that it was accurate.

Mr. SIEBOLD agreed that it was a very accurate and good test. In Allen's book it was condemned as inaccurate, but he did not know how Mr. Allen had arrived at that conclusion.

FURTHER CONTRIBUTION TO THE PHARMACY OF LINSEED.

By Thomas Greenish, F.C.S.

THE author of this paper stated that, at the Conference at Edinburgh in 1871, he drew attention to the linseed meal made in accordance with the directions of the British Pharmacopœia, i.e., the cake of linseed from which the oil has been pressed reduced to powder, as being unsuitable for the purpose for which linseed meal was ordered, and strongly urged on pharmacists to keep a crushed linseed, as being more suitable for the cataplasmas of the Pharmacopœia; but at that time his information as to the mode of preparation of the crushed linseed was insufficient, and he now suggested it for the use of pharmacists, to the exclusion of the preparation made according to the directions of the Pharmacopœia. The kind is known in commerce as the best light crushed linseed.

The linseed from Bombay being the richest in farina, and being also the most free from weed seed, and consequently from cruciferous seed, is recommended for the production of the crushed linseed, and this, with the removal of 20 per cent. of the husk, but retaining the whole of the oil, is recommended as the best for pharmaceutical purposes, and the one which he hopes will hold a place in the next Pharmacopœia to the exclusion of that now directed to be used.

The author recommends about 20 per cent. of the husk being removed from the crushed linseed, as it then makes a more elegant preparation; but as the husk yields that mucilage which gives a plastic character to the poultice, it is not desirable that the whole should be removed.

With regard to a suitable description for the next Pharmacopœia, so that chemists may not be subjected to the harassing interference of the public analyst, it is desirable that it should not be too narrow; and he suggests that in the next Pharmacopœia there should be a return to the name used in the London Pharmacopœia of 1836 and 1851—semina lini contrita (bruised linseed), leaving it to the pharmacist to remove for the sake of an elegant product about 20 per cent. of the husk. The light-crushed linseed will keep good for several months, which may be considered a reasonable length of time in the ordinary storage of the pharmacy. It will still be necessary for the wholesale dealer to keep the dry powder to meet the wants of poor localities, and also for the luting of pharmaceutical apparatus, for which the crushed linseed is not suitable.

The PRESIDENT congratulated the members on having such an interesting paper read to them.

Professor REDWOOD agreed with the President that they were greatly indebted to Mr. Greenish on this and previous occasions for papers on the subject of linseed-meal. He was not going to object to the general purport of Mr. Greenish's recommendation with reference to linseed-meal. For his own part, he was formerly certainly not favourable to the recognition in the Pharmacopœia of crushed linseed as linseed-meal. He was not still quite prepared to go with Mr. Greenish in what he inferred was Mr. Greenish's opinion that the term used formerly in the London Pharmacopœia of "semina lini contriti" signified crushed linseed. That term "contriti" certainly was translated by the author of the Pharmacopœia, Mr. Philips, as powdered linseed—linseed in powder; and his own experience was to the effect that at the time of the publication of those Pharma-

copæcias, in 1836 and 1851, crushed linseed was not in common use among pharmacists. Going back to 1836, he was not at all sure that it was ever met with in pharmacies; at any rate, he knew that in some first-rate pharmaceutical establishments in London such a thing was never used or in any way recognised as linseed-meal; and, therefore, what was intended to be referred to in the London Pharmacopœia was the article in common use, viz., linseed which at first had been crushed and the oil extracted, and then the cake reduced to powder. At the time that the British Pharmacopœia was in process of preparation the crushed linseed that was then coming into use as the basis of poultices was not approved by all who used it, that especially it was found to be liable to be mouldy when kept in close vessels, and on that account many gave the preference to the older preparation, viz., the powder of the pressed seed; and the authors of the British Pharmacopœia were of opinion that the old preparation, if used with a portion of oil, was preferable to the then being introduced new oily preparation. Since then he had come to the conclusion, seeing that pressed linseed had now largely superseded the old preparation, that it would be right to recognise this preparation in the Pharmacopœia. But there were two or three circumstances which deserved to be well considered in forming a conclusion upon this subject. Mr. Greenish had referred to the fact that linseed was very liable to be adulterated and mixed with foreign seeds; that there were cruciferous seeds in it, which were capable of yielding an irritating product when made into a paste with water, and that that was specially to be guarded against and avoided. But was there not a greater liability to cruciferous seeds in crushed linseed prepared specially for pharmaceutical use than in the powder of previously pressed seed from which the oil had been removed? For many years there had been great difficulty in getting pure linseed oil. Why? Because the seed from which the oil was extracted by pressure contained foreign seeds which yielded an oil that did not possess the same drying property that the pure linseed oil possessed. And what had been the consequence of that? Why, that oil merchants and oil pressers had resorted to the most stringent means they could devise for excluding all linseed oil that contained any of the cruciferous seeds where they were intended to be pressed for oil. There was a society in London which was maintained at a very large cost; the secretary was paid 800/- or 1,000/- a year, and he had a regular establishment of clerks and persons who were well acquainted with the subject working under him, and all the seeds—the linseed—that went to the pressers to be pressed for oil were now subjected to a careful scrutiny, and the proportion of foreign seeds indicated. Therefore, he took it that the oil which was now produced as linseed oil, and supplied to painters—that at any rate commanded the market—was oil which was produced from the purest variety of seed; and, if that was where the shoe pinched, viz., the difficulty with reference to the cruciferous, it did not seem that the crushed linseed offered so much guarantee of purity. The best seeds, he took it, would be applied to the purpose of pressing for oil; and, therefore, it did appear to him that, at any rate, it would require great care and very nice observation on the part of pharmacists to guard against the use of those seeds that had not been passed, or were incapable of passing, the Linseed Association of London, where they were all microscopically examined; and his opinion was that there would be a great liability that those seeds would be ground up—crushed, that is to say, for pharmaceutical use, for the production directly, not by secondary means—for the production of linseed meal or crushed linseed. There would be seeds that would not have yielded any oil at all; and he took it that it would be looked upon commercially and economically as very much more important to the dealers upon a large scale—the importers of linseed—to be able to supply a seed that would yield an oil above suspicion.

Mr. WREN said the quotation of a fair price would not guarantee pure linseed cake; it would require to be specially prepared. In Herefordshire he came across a machine for the separation of round seeds from wheat and oats. It had a long cylinder revolving at an angle of about 15° to 20°, and showing a number of holes. As the cylinder revolved, the round seeds remained in these holes, and the grain of the wheat and oats being of a different shape, passed on, and these two kinds of seeds were separated. He should be glad to give the name of the manufacturers of this machine.

Mr. BORLAND considered that Mr. Greenish had failed to give his reasons for removing from the seeds 20 per cent. of the husks. By doing so a very large proportion of the mucilage-bearing cells was removed. With regard to commercial seed, a sample had been submitted to him which contained starch. On referring to works on the subject, he found that linseed that had been collected when the seeds were unripe, contained starch to a very considerable extent; but when the seeds were fully ripened, no such thing as starch was to be found in the grains at all.

Mr. FRASER said he had been in the trade since 1838, and he never sold anything but crushed linseed. They had never had any difficulty in getting it pure. They had only to pay the price for it.

Mr. HOLMES had had an opportunity of examining a large number of samples of linseed, and he had also visited the Linseed Association; and his experience, like that of Mr. Fraser, was that, if you wanted good linseed, you could get it by paying a good price for it, but if not, you could get it as bad as you liked. But still there were three varieties of linseed which were generally pure, viz., the English, Dutch, and Sicilian.

The English and Dutch were small, and the Sicilian large. Bombay linseed was of a varied character. He had seen Bombay linseed which contained more cruciferous seeds than the Russian. Professor Redwood said that they could get pure linseed cake, and no doubt they could; but from the reports in the *Liv Stock* and other journals, the cake used in cattle-feeding was very often impure. Every pharmacist should buy the best linseed and grind it himself.

Mr. BOTTLE said he could go a long way with Mr. Greenish as to the desirability of using crushed linseed instead of the old linseed meal, but he did not go with him to the extent of taking 20 per cent. of the husk from the seed. There was a large amount of mucilaginous matter in it. He knew that formerly there was no difficulty in getting pure linseed meal and pure linseed oil. But, unfortunately, linseed was required at a price, and then they got a different preparation for a poultice from the linseed meal prepared from oilcake. For many years he had been in the habit of getting crushed linseed, and he did not experience the annoyance of its going bad. If the seed was in good condition before it was crushed it kept very well, and it kept as well as the old dry powder did. So far as Mr. Greenish's remark was concerned—that by crushing instead of entirely getting the oil out they had a surface less liable to oxidation than the old powder meal—he did not go with him. For his own part, he fancied that they had the husk saturated with oil to a far greater extent, and it was only necessary to put a little of the crushed powder on paper to ascertain that fact: the oil would be all over the paper. He got his own linseed crushed by a steam crushing-machine, and it did not contain 2½ per cent. of anything like impurity.

Mr. ATKINS said they were not so far advanced as Mr. Fraser and his friends in Glasgow, who had always been lucky enough to get good linseed.

Mr. FRASER: It came from Liverpool.

Mr. ATKINS said he agreed with Mr. Greenish in that it was desirable to have a pure seed, and to crush that seed rather than to have a pure meal and to add the oil subsequently.

Mr. CLARKE said there never was a time when there was such a really large proportion of pure cake sold as now. There was no difficulty in getting genuine cake and clean crushed seed at the present moment.

Mr. HASSELBY said that doctors now had the idea that the crushed linseed was the best, and they told their patients that they must get the crushed linseed with the oil. With regard to adulterants, they were suffering from having to compete with grocers, who bought linseed meal without getting any guarantee as to its purity at all.

Mr. MARTINDALE was under the impression that before the Russian War the large seed came from Riga to Hull, but afterwards they got it from India, and it became mixed with the cruciferous seeds. The most of the London hospitals used the powdered cake, and preferred that. He himself supplied the crushed linseed because there was a popular demand for it; but as to the merits of the two he was still in doubt. In his younger days they supplied nothing but the powdered linseed cake, until some West-end firm introduced crushed linseed containing the oil, but whether with any beneficial results was doubtful.

Mr. FARNWORTH (Blackburn) said he had had a great deal of experience of common linseed meal and the farina to be got from the linseed; and the only satisfactory thing was to take either English or French linseed. With reference to the drying property of linseed oil, he found from conversations with oil merchants and manufacturers in Hull that the Baltic oil was the best drying oil, and in Liverpool, where the Sicilian and the Indian seed was so largely imported, it did not dry so well as the Baltic oil.

The PRESIDENT said, before calling upon Mr. Greenish to reply, he might remark that he used to have an old-fashioned mode of testing linseed meal—he used to chew it.

Mr. GREENISH, in reply, said his main object was to draw attention to the crushed linseed for our future Pharmacopœia. Professor Redwood had stated that it was exceedingly difficult to get good linseed oil on account of its cruciferous seeds. Necessarily they must have cruciferous seeds in cake used in the form of linseed cake. He objected *in toto* to a linseed cake not pressed for the sake of linseed meal being used in the form of linseed meal. It was more consistent with pharmacy to have the crushed linseed made specially for pharmacists. He found that there was not more than 2 or 3 per cent. of adulteration in the Bombay linseed, but he had a specimen of a linseed from a Northern clime which contained an enormous quantity of foreign seeds. Mr. Borland had objected to 20 per cent. of the husk being removed. Well, so long as they had quite sufficient for a mucilaginous poultice, they had quite enough for any quantity of albumen which they might require.

STANDARDISING PHARMACEUTICAL PREPARATIONS.

By G. F. Schacht.

MR. SCHACHT'S paper urged that it is the duty of pharmacists to standardise with severe accuracy all preparations of known definite composition—and these only. And second to extend this class of remedies to the utmost, and to eliminate,

as far as possible, all whose composition is unknown or even uncertain.

He argued that upon the professor of medicine rests the obligation to investigate the various powers of curative agents upon the human system, and the determination of their remedial values, and that the scientific record of their physical and chemical properties falls to the pharmacist.

The practice of medicine is, at the present moment, very largely empirical, nor is there the least taint of disrespect implied in the statement.

There are prescribers of various kinds; there are those whose prescriptions are more or less severe and simple—and on the other hand those whose style is more or less poetic and vague.

"The exact prescriber who desires to mark the precise vital phenomena that attend the exhibition of an exact quantity of a special remedy can confidently rely upon pharmacy for the integrity of his experiment.

Should his experiment, for instance, touch the subject of opiates, he can prescribe morphia, codeia, &c., as he pleases, and in proportion as he desires exactness, exactness he can have.

But if he prescribe the less exact extract of opium or the still less exact crude drug, the inference is that, for the moment at any rate, he has parted with exactness, and prefers the dash of vagueness that his prescription indicates. In this case also we can have his way.

In prescribing opium, it is clear he did not want an exact dose of the chemical morphia—he preferred the indefinite mixture of things called opium—the responsibility of the pharmacist ceased with the correct dispensing of the prescription.

There are forces or modes of force in opium other than morphia, and in cinchona other than quina, and in nux vomica than strychnia. How then can we scientifically measure them by any one fraction of their respective potencies?

A Committee of the British Medical Association has been formed for "the collection of evidence as to the effects of certain remedies," and there is some probability of a chair being created in the University of Cambridge, the chief work in connection with which is to be the study of the operation of medicines in disease.

Pharmacy can probably co-operate in such inquiries, but meantime let us pretend to nothing that we do not know, lest we mislead. We know for certain that all the medical potency of dilute hydrocyanic acid must depend upon the hydrocyanic acid that it contains—and let us be scrupulously careful to "standardise" our solutions to the authorised strength. But as we know but little of the medical potency of many of the principles that together constitute most of our galenical remedies, let us forbear to assign them a quasi-potency which a fuller knowledge may show to be erroneous.

position should be used as far as possible, and whilst it was admitted by Mr. Schacht that it was most important that such preparations should be standardised, yet he (the speaker) was anxious to show that they were called upon to go further than Mr. Schacht seemed prepared to go. Mr. Schacht had laid down what they must be prepared to admit—that the practice of medicine was, to a great extent, empirical; that of the medicines which were employed for the relief of disease, nine-tenths, or, at any rate, a large proportion of them, were preparations the exact composition of which they were not acquainted with, and, in fact, had not the means of fully and entirely becoming acquainted with; and it had appeared to him that it seemed to be contemplated that all such preparations of indefinite and unknown composition should be excluded from the practice of medicine. That really lay at the foundation of the statement which had been put before them. All that medical men in the present state of medical knowledge could attain to was that experience which was founded upon observation, that, by the employment of certain substances called medicines, certain results might be produced; and it mattered not whether these substances were substances of a perfectly definite and known composition or not. It appeared to him to be clear that their advance in medical practice must be founded upon the substances which were used being, as far as possible, identical in any particular case, which was to be treated with such as had been successfully used in similar cases before; and that must be the mode of reasoning that must be applicable to indefinite medicines, as well as to definite medicines. All that he had ever contended for in connection with the standardising of these Pharmacopœia preparations was that they should, as far as it was found practicable, have methods by which they could ensure certain preparations corresponding with those which had been used on former occasions; that, in fact, our medicines—whether they were galenical or chemical—should be subjected to certain means of examination by which they could ascertain to what extent they coincided in certain properties with the medicines that were intended to be used. For instance, they knew that there were many potent medicines the efficacy of which was ascribed to certain chemical principles which were present; but chemical principles were definite and known, and were of the nature of those which Mr. Schacht especially had referred to as being such as he would advocate the standardisation of; but they knew also, with reference to many of those medicines, the effects which had been produced by the active principles in their separate state did not at all come up to the effects which were got by preparations which contained those active principles associated with others; and he himself could see no reason why, with reference to such preparations as those of opium and cinchona bark, and other substances which were of an active nature, but contained definite active principles, they should not, as far as they could, regulate the condition of the preparation of such medicines, so that they should adjust the proportions of the active constituents, leaving the others, which were less active, undetermined. He admitted that this was a defective method of carrying out the object, but he contended that it was much better to carry it out as far as they had practicable means of doing so than to reject it altogether, and not attempt anything like standardisation. For instance, taking such preparations as the cinchona bark, which he had been and still was actively working upon—in cases of that description where it had been shown that medical men and pharmacists had been for a long time using such preparations under the idea that they contained a certain proportion of the active principles, but had been subsequently convinced that they were deficient in those respects—he saw no reason why, because they could not standardise every constituent of such preparations, they should neglect to accomplish the object as they could with reference to those which admitted of it. At one time he thought that one object that Mr. Schacht had in objecting to the standardising of galenical preparations, the whole composition of which they were not acquainted with, was that those should be discredited in the estimation of medical men, so that medical men should be driven, as it were, to the use only of such medicines as were of a definite and known composition. He was sure, if that were contemplated at all, it was not an object which it would be desirable for them to promote in any way, because he did not consider that medical knowledge had yet advanced to that position that, even with regard to the agents of known composition, they were altogether acquainted with the *modus operandi*, so as to make therapeutics anything like scientific; and, therefore, his idea was that, under existing circumstances, the best thing they could do was to carry out the system of standardising as far as they could, and especially with regard to known and active constituents of galenical preparations.

Mr. PLOWMAN was inclined to agree with Mr. Schacht and Mr. Dott in standardising only those things which were of a perfectly definite character. There was no doubt that medicine was largely empirical, and of course they must distinguish between physiological action and therapeutic value. There were many drugs the physiological action of which was not known, and never can be known, of which the therapeutic value was indubitable; and in this case it was hopeless to endeavour to standardise.

Mr. HASSELEY said they could standardise opium and certain other things; but there were many powerful remedies in which no attempt whatever had been made to standardise. It would be a great benefit to chemists themselves in examining their own articles if they had a standard for tincture of aconite and helladonna. It exhorted the young men to take up the standardising of some of the tinctures and preparations if they were

to compete with the grocer, who was able to sell much cheaper than the chemist.

The PRESIDENT said that what he understood by the empirical in medicine was that the medical man was guided by experience and it was not theoretical knowledge of the properties of the thing that enabled him to administer the particular medicine. For instance, if they took such an article as bismuth, they would not by any process of *a priori* reasoning use bismuth to many diseases in which it was found valuable. It was still empirical, but

was a most invaluable article of the *materia medica*. That explained the difficulty of medicine being as scientific as they desired it to be, and they must therefore accept a body which was not quite understood, as far as its action went upon the system; and they must be content to take the experience which medicine had taught as to its good properties rather than throw it over because they did not understand why it had those properties.

Mr. MARTINDALE said that for such drugs as opium, barks, and strychnia, and a number of other drugs, which were perfectly worthless for alkaloid manufacture, they ought to give a test which would exclude such from use in medicine. When it came to preparations, they had better leave it to the skilled operator rather than take the strength of a tincture. As to the way in which they were to be repaid for standardising—it would throw a great deal of the trade into the hands of the wholesale manufacturer. They should exclude bad drugs rather than standardise the preparations of them in the *Pharmacopœia* itself.

Mr. GERRARD said there were very few drugs which admitted of standardising with that degree of accuracy which they would like to see. With reference to *nux vomica* he felt a certain amount of doubt, and he saw a difficulty in such a drug as the alkaloids themselves—strychnia and brucia were not always present in uniform proportion. Most of their galenical preparations were subjected to changes; a tincture when kept for twelve months became a different thing, and the active principles were destroyed to a certain extent. This opened out a great difficulty in dealing with standardising. He was inclined to think that the subject of standardising would have to be discussed far more fully than it had been by pharmacists.

Mr. SCHACHT said the difference between himself and Dr. Redwood was simply one of degree; and he was content to leave it to the practical wisdom of their fellow pharmacists. Dr. Redwood agreed with him that standardisable things should be standardised; but the doctor wanted to go a little further than the limit he had himself laid down. That was simply a practical question; and, as soon as knowledge was obtained with reference to any complex body, more especially therapeutical and physiological knowledge, but also chemical knowledge of any mixed compound—as soon as that knowledge was achieved to the extent of enabling them to determine the exact therapeutical value of every ingredient in a compound body, then it became a standardisable article. Mr. Plowman seemed to be of opinion that *nux vomica* was such a thing that they knew enough of chemically and medically to enable some authority to declare how preparations of *nux vomica* should be standardised; to that case he took exception. Although they knew a great deal about strychnia, his impression was that brucia had never been experimented upon, for the very excellent reason that brucia had never been obtained pure yet—commercially certainly never. It was very doubtful whether it had been seen pure even by the man of science; and he was quite convinced that there had been but a very imperfect knowledge of its therapeutic value. They did not know but that in any two separate samples of *nux vomica* the proportion and relation between the two alkaloids would be different. All experience had shown them that, and therefore to standardise an article which resulted from the manipulation of *nux vomica* by the contents which it might or might not contain of one of its ingredients, seemed to be unscientific, and it was upon that ground that he opposed the standardising of any preparations. Dr. Redwood said that they were called upon to give a definitive standard. He did not know by whom they were thus called upon. Theremedical men could not do so, for they had no right to do so; and they had no right to ask pharmacists to go ahead of medicine. If they wanted strychnia and brucia, they could have it; but they must make the first move. It was not for pharmacists to supply them with any standardised preparations whatever. The mere standardising of barks by the number of mixed alkaloids was misleading, and it was worse than unscientific; in fact, it was a direct contravention of truth. He did not blame the profession for being empirical, they must be so in their treatment of disease. Why should they as pharmacists be anxious to supply the deficiency of the medical profession? Why should they meet empiricism with accuracy? He did not wish to drive the profession to using nothing but exact remedies.

Mr. PLOWMAN explained that when he spoke of *nux vomica* he said that it might, perhaps be standardised, and he meant that it was on the border-line of standardising.

Mr. DOTT also replied. He could not understand how they could standardise the preparation by estimating the amount of alkaloid that it contained if the activity was not due to that alkaloid. The very fact of using them as a means of standardising was a tacit admission that the activity was due to the alkaloid.

The Conference then adjourned.

Wednesday, August 13.

The Conference resumed at 10.30 A.M.

A FOSSIL ALOE FROM THE WEALDEN.

G. A. Keyworth, F.C.S.

AMONG the shingle which lies beneath the cliffs of Hastings may be sometimes observed certain curious brown stony masses, rounded by the waves and perforated with numerous longitudinal furrows, which are studded with minute glittering crystals. These masses are portions of the stem of a fossil-plant belonging to the endogenous or monocotyledonous order, having leaves with parallel veins. This great division of the vegetable kingdom, represented in the temperate zone by grasses and herbaceous plants, rises as we approach the tropics to the lofty palm, the bamboo, and the aloe, including numerous trees of extreme usefulness. These stony masses consist of silica or flint, with a trace of iron, and are almost entirely soluble in hydrofluoric acid. The fossil is known as the *Endogenites erosus*—a name invented probably by Dr. Mantell, a geologist of great eminence, who devoted himself to the geology of the South-Eastern portion of England. Some have thought that these fossils belonged to the palms or to a gigantic rush, or, with Mr. Dixon, a distinguished Sussex geologist, to the tree ferns. Mr. S. H. Beckles, F.R.S., an eminent local geologist, who found a fossil-leaf *in situ*, with a portion of the stem, near the White Rock at Hastings, considers that the great American aloe is the nearest living representative of this ancient fossil. The fossil before us was a living tree, flourishing with grace and beauty in this neighbourhood at a period long previous to the chalk era, under conditions known as those of the Wealden, so called because first studied in the South-Eastern portion of England, called the Weald from its ancient forests. The Wealden was a fresh-water formation deposited in the delta of one or more large rivers, entering the lagoon near the site of Oxford and extending to Central France. It was laid upon a previous oolithic floor, produced, together with other secondary formations, after the close of the coal period. The Australian continent presents now an area analogous to what this oolitic floor was before the Wealden lake commenced, its kangaroos being representative survivals of the mammalian life of that period. Portions of the sandy shoals of the Wealden lagoon were occasionally left dry, and show us now ripple-marks from ancient currents, and sometimes the footprints of air-breathing animals of the strange amphibious unwieldy forms restored with great skill at the Crystal Palace.

The trees of this region, growing upon the drier portions of the surface, consisted of various pines, cycads, ferns, with palms, and, as we see, the aloe. The climate was sub-tropical. We must imagine a large area of sandy shoals and damp meadows, resembling probably the existing delta of the African Niger, which stretches into the interior for more than 170 miles and covers some 300 miles along the coast. The sand thus carried by currents age after age slowly accumulated, together with mud; and thus, aided by a sinking process, the Hastings sand formation was deposited, together with other formations of sand and clay, the thickness of the whole Wealden series being estimated by Lyell at 2,000 feet. Great changes then followed. The Wealden formation descended beneath the ocean, and upon it commenced the slow deposit of that chalk which we see at Dover, Folkestone, and Beachy Head. When in the course of an enormous period this chalk had been deposited, it was slowly upheaved to form the vast ridge of the North and South Downs. A scalping and sculpturing process now set in, effected by the agency of ice and streams of water, and laying bare the Hastings sandstone formation. How difficult to realise all this, and how strange to reflect on the long imprisonment of these fossils, their burial during countless ages fast locked in the sandrock whose crown was now an ocean-floor rearing a mighty burden of chalk, the uprising of the whole of which is seen in the bent and distorted Hastings sand strata!

The denudation referred to removed the chalk from the wide-area of Pevensey level, the Hastings Coast, the Pett level by Rye to Folkestone, and far inland behind, extending westwards into Hampshire. At Tunbridge Wells a hard bed of white sand occurs, belonging to the Wealden formation, which occasions the picturesque scenery of the high rocks

and other resorts. To the sandrock Hastings is indebted for much of the charms of its scenery. The warm tints of paler or darker brown, often seen in relief against a sapphire sky, give effects of light and shade which attract the pencil of the artist: the hills and valleys with rounded outlines clothed with verdure give variety to the Sussex landscape.

Previous to 1872 nothing was known of the strata lying beneath the Wealden centre. In anticipation of the visit of the British Association to Brighton, Mr. Henry Willett suggested the celebrated Subwealden boring, with the twofold object of ascertaining the nature and thickness of the underlying strata, and also whether coal strata, as in Belgium and the Boulonnais district in France, extend across the Channel in this direction. Subscriptions came rapidly in, and the boring was commenced in August, 1872, at Netherfield, near Battle, and attained a depth of 1,905 feet in all. The boring first passed through clay and shales, and at 125 feet a bed of gypsum was reached 43 feet thick. The rest of the strata consisted chiefly of sandstones and shales. Some important additions to geological science were made by this boring, and Sussex was raised to a place in the "Mineral Statistics," a shaft having been sunk near for the purpose of extracting the gypsum. The mine is now worked with success on an extensive scale, the gypsum being of superior quality. This is the only mine of any kind in Sussex, where, three centuries since, the woods resounded with the clang of heavy hammers and the roar of furnaces, whose glow was conspicuous by night. The manufacture of iron from the ferruginous sands and clays of the Wealden, commenced by the Romans, was at that period the most important in Great Britain.

The PRESIDENT remarked that geological papers were not usually brought before the Conference, but as its author was well known locally, and had given an interesting account of the geology of the district, he was sure the meeting would award him its thanks.

Mr. BORLAND said the paper gave much information that was specially valuable to those who came from a distance and from lower geological horizons. He would ask for further information as to the grounds on which the specimen had been identified as an aloc. The leaf was said to be lanceolate, while those of the *Aloideæ* were broadly subulate. He would have liked to have comparative descriptions of the transverse sections of the fossil leaf and recent aloe leaves.

Mr. HOLMES remarked that the term "American aloe" was applied generally to the *Agave*, a plant belonging to an entirely different order. Did the author allude to this, or to the *Aloe Barbadiensis*? He had noticed particles of jet in a fossil stem at Whithy, and it might be that jet was resinified in the course of ages. The presence of jet in the fossil leaf would point to a relationship with the *Dracenas*, which were remarkable for their resinous secretions.

Mr. KEYWORTH said that in identifying the specimen he was guided entirely by the opinion of Mr. Beckles. He considered that the range of the Conference was, perhaps, unnecessarily limited, and that this specimen being an aloe brought it within the range.

ON HYMENODICTYONINE, AN ALKALOID FROM "HYMENODICTYON EXCELSUM."

By W. A. H. Naylor, F.C.S.

THE isolation of this alkaloid and its empirical formula have been announced in previous papers by the author. Experiments have been made to determine its molecular weight. Attempts to combine it with monobasic mineral acids yielded such impossible results that a fresh supply was prepared with extra care. It was found that by extremely slow evaporation of its ethereal solution, as putting a little in a test-tube and stoppering it with a cork through which a pin-hole had been drilled, it assumed a distinctly crystalline form. When placed in contact with cold sulphuric acid, the solution by transmitted light assumed a lemon-yellow colour, passing to a wine red, and ultimately to a deep claret; by reflected light it presented a bronze appearance.

It was found difficult to burn off the carbon, but combustion with chromate of lead yielded figures which agree with those deduced from analysis of the platinum salt, estimation of the chlorine in the double salt, and in the hydrochlorate of the alkaloid and the composition of its diethyl iodide. The alkaloid proves to be dibasic with the formula $C_{23}H_{40}N_2$, and it is apparently a tertiary diamine. Its chemical properties display a close analogy with those of nicotine. Lack of material prevents fuller study at present, but it is hoped that the chemistry of the alkaloid has been elucidated sufficiently to

justify the physiologist in investigating its properties. This is the more important from the reputation the drug has acquired as a tonic and febrifuge among the Hindoos.

The PRESIDENT congratulated Mr. Naylor on his interesting paper. Some doubt had been thrown on the results given by Mr. Naylor at Southport last year, but now he had succeeded in producing the alkaloid in crystals, and the results were highly satisfactory.

Mr. GERRARD also congratulated Mr. Naylor on the result of his work. He would ask him whether he endeavoured to prepare the iodine and bromine substitution compounds, and what result he obtained from them. He was pleased to hear from Mr. Naylor that he was able to obtain the alkaloid in crystals, and that he used ether for that purpose. For himself, he had found that by using an absolutely pure ether he had obtained from alkaloids, as regarded crystallising, the most satisfactory results.

Mr. NAYLOR replied that he had only obtained the bromine substitution compound.

NOTE ON THE FILTRATION OF LARD.

By W. Willmott.

THE author stated last year, as the result of certain experiments, that washing and straining, or washing and filtering, were without advantage in the preparation of lard for use as an unguent basis; and, further, that filtration *per se* possessed no advantage in practice. In reply to this Mr. Conroy said "he found that by filtration he got a most excellent product which would keep good and sweet." He did not consider washing to be of much use, but careful filtration was necessary to separate decomposable matter." Professor Redwood subsequently expressed the opinion that "complete separation of all suspended matter is obviously important, and, therefore, filtration seems desirable where practicable." At the Exeter meeting, in 1869, Mr. Edward Smith said: "I cannot too strongly insist that if lard be required of first quality it is absolutely essential that it should be filtered through paper . . . the germ of success lies in filtration . . . to strain is to invite inferiority, to filter is to secure superiority if not perfection."

Mr. Willmott has, therefore, made some more experiments. He took perfectly fresh lard, melted it, and strained it through fine tow, flannel, and fine linen, and filtered it through paper. A portion of each of these strained specimens was allowed to pass into a test-tube, and all being subsequently melted at the same temperature, the difference in clearness and uniformity of condition, when examined by transmitted light, was practically *nil*. The specimens were then used in the readily-changing ointments.

Table showing generally the effect as regards rancidity in the two most rapidly decomposable ointments when prepared respectively with strained and filtered lards.

Unguent. Summer Temp. 65° to 80° F.	Lard strained through tow, flannel, or linen	Lard filtered through paper	Lard washed and strained through flannel
Ung. plumb. carb., 4th week	Changing	Changing	Changing
Ung. plumb. carb., 5th week	Rancid	Rancid	Rancid
Ung. hyd. n. ox., 4th week	Good	6. Changing	Changing
Ung. hyd. n. ox., 5th week	Good	5. Changing	Slightly rancid
Ung. hyd. n. ox., 6th week	Slightly rancid	Rancid	Rancid

A third ointment (ung. pot. iod., and zinc. carb.) soon became discoloured, the difference being distinctly to the disadvantage of the specimens prepared respectively with the washed and filtered lards.

This general statement, the author thinks, shows that, so far from the filtration of lard possessing any advantage in practice, the operation is one which will be found to be "more honoured in the breach than the observance." He regards his former experiments as clearly corroborated, and considers that the most desirable method for adoption in preparing lard for use in pharmacy is one corresponding to that suggested by Professor Redwood; or one assimilating, with some slight modifications, to the process of the British Pharmacopœia of 1864. These processes exclude both washing and filtration.

The PRESIDENT remarked that if filtration gave but little advantage they had all gained something by Mr. Willmott's paper.

Mr. NAYLOR opened the discussion. He said that if Mr. Willmott had performed his experiments on a larger quantity of material—say, $\frac{1}{2}$ ton of lard—he would probably have obtained different results. Nor were the results obtained very striking, except that they tended to show this—that it would be very unwise to attempt filtration through ordinary filtering-paper. Then he did not understand Mr. Willmott's vague expression "rancid." He did not know what standard Mr. Willmott employed; whether he tested rancidity by the smell, or by the taste, or by litmus, or by determining the amount of acidity. He should like to have seen some better evidence brought forward in that matter. The differences would not be appreciable by the smell, nor would slight degrees of rancidity be appreciated by a litmus-paper, or by any physical appearance which the ointment might present. He was still of opinion, from having operated on very large quantities of lard, that it was better to melt the lard at a low temperature, and then to rapidly pass it through filters, and in that way a better-looking product was obtained physically; and he had always found that if the temperature was not raised too much, and if filtration was conducted rapidly, so as to remove the membranous tissues, it would keep well for a considerable length of time.

Professor REDWOOD would like to say a few words on the practical application, in regard to the production of a pure lard suitable for pharmaceutical purposes. He was not disappointed with the paper, like Mr. Naylor; on the contrary, he thought Mr. Willmott had done good service in the interests of pharmacy by the experiments that he had made. It appeared to him that those results were such as he anticipated. He had had a good deal of experience outside of pharmacy with regard to the means of preparing animal fats in a state in which they would resist the influence of contact with atmospheric air for as great a length of time as possible. The estimates which he had been compelled to form in reference to this subject would not be approved of by Mr. Naylor, because they were not strictly scientific; but, nevertheless, they were such as practical men were in the habit of employing and resorting to—that was to say, the observation of the physical characters of the substances under operation. It was not very easy in such a substance as lard to be able to indicate the successive changes which took place in it quite scientifically and chemically; but it was comparatively easy to ascertain what and when changes took place which were calculated to interfere with the pharmaceutical applications that were contemplated. This was an important subject at the present time, and it was one which presented very great interest to him, for he was always glad to gather all scraps of information in every direction bearing upon the applicability of various substances as the bases of ointments and other similar applications employed medicinally. There had been for some time past a great deal of discussion, and no small difference of opinion, as to whether it were desirable or not to retain animal fats as bases for preparations of that description. They might observe that from a great variety of sources—those who had had to receive applicatus in connection with proposals made for a new addition to the Pharmacopœia knew it too well—in such communications a vast number of recommendations had been made, medically and otherwise, to the effect that the time had come when animal fat should be excluded altogether from use as the basis for external applications. That was an opinion which he could not in the slightest degree sympathise with or confirm. His own opinion was that for a great part of the ointments in medicine they had no better bases, no bases that were comparable to good, pure, sweet, prepared lard. The conclusion that he had come to closely coincided with that expressed in Mr. Willmott's paper. He conceived that for the purification either of lard or of any animal fat it was desirable that the purification should be effected at as low a temperature as was practicable; that the animal fat should be as completely free as possible from other matters which originally were in contact with it, and were liable to become divided into fine scales to a greater or less extent. Such purification effected in that way, at as low a temperature as possible, with, at the same time, as little exposure during the process either to water or to atmospheric air, appeared to him to be the points that were mainly to be arrived at. Freedom from foreign matter, as far as possible, in the lard, was the effect to be arrived at, and such purification they should all agree in considering should be effected, as far as practicable, without exposure of the fat to contact with atmospheric air. He would hazard the opinion that the bad effect which Mr. Willmott had experienced from the use of what they might call fine filtration—because it was really a question between fine filtration and coarse filtration—might be ascribed to this: that in such operation the process was necessarily comparatively slow; and in a medium of that description, through which the fat was to be conveyed, there was, no doubt, a much greater amount of contact with atmospheric air. Porous bodies had a large amount of atmospheric air adhering to their surface; and in passing a substance, such as lard or fat, through a porous medium of that description, they were really subjecting it to a much more severe test, as resulting from the contact of atmospheric air, than would be otherwise the case. It appeared to him that that lay very much at the foundation of the difference which had been found by Mr. Willmott.

Mr. COOKE said Mr. Naylor did not consider the experiments made by Mr. Willmott were comparatively valueless, but that the results were dis-

pointing. That was the view which he took of Mr. Naylor's remarks—not that the experiments themselves were disappointing, but the results; and he must say that he somewhat sympathised with Mr. Naylor. When they considered the subject of lard and the rapid changes which took place, the question which they had to consider was practically whether by exposing it to filtration they did not do more injury than good. If they filtered lard through a very fine paper it took a considerable time to do it, and that meant that they were to expose it for a considerable time to great heat.

Mr. WILLMOTT in reply, said Mr. Naylor had complained of the results of the experiments; but he could not command the results, and he simply gave them as obtained. He had no idea of making the results striking. His argument was simply to show that filtering possessed no advantage; and the paper showed that it possessed no advantage, but, on the contrary a slight disadvantage. As to the question of rancidity, he mentioned on the last occasion that he made no attempt to examine these specimens chemically, because it was not necessary; and as to the existence of rancidity, 99 out of 100 would be able to tell whether the specimen of lard placed before them was sweet or not. He simply dealt with their physical character, and his experiments had been framed accordingly.

ON THE COMPOSITION OF SEIDLITZ POWDERS.

By William Martindale.

HAVING noticed that a peculiar foam or scum rose on the top of the effervescence and covered the sides of the tumbler, under certain conditions, when a seidlitz powder was mixed with water, Mr. Martindale sought to ascertain the cause of this. The chemicals of which the powders tested were composed were found free from lime. On mixing each powder separately clear solutions were formed; but if these solutions, especially if fairly concentrated, were mixed, the same result as above was obtained. He noticed, further, sometimes a quantity of white precipitate formed at the bottom of the glass after the brisk effervescence had passed off, while at other times there was none. On testing the weighings of the alkalies he found them fairly correct, but the acids varied. One out of a box of the same lot weighed $39\frac{1}{2}$ grains, another only $35\frac{1}{2}$ grains. Hence the principal cause of the foam and precipitate. The extra amount of tartaric acid in some caused a deposit of acid tartrate of potash in the solution when the seidlitz powder was mixed. The presence of an excess of lime in the water seemed to increase the amount both of foam and precipitate, but these were only caused when an excess of acid was used. They were increased by using a small quantity of water, and by having this at a low temperature, as well as by the lime salts above mentioned. But the foam will rise on the froth of a neutral seidlitz powder mixed even with distilled water, if very cold and only a small quantity of it be used; yet it is soon re-dissolved, and a clear solution eventually formed.

Mr. Martindale mentioned that Christison seemed to think the term "seidlitz," as applied to these powders, was not derived from the seidlitz spring, but was a corruption of Seignette, the name of the Rochelle apothecary, who for a long time secretly prepared the principal ingredient in them—Rochelle salt, in French known as *sel de Seignette*. He next referred to the varying composition of seidlitz powders as given by different English and American writers on the subject. All agreed as to the alkali—tartarated soda, 120 grains; bicarbonate of soda, 40 grains; but for the tartaric acid Pereira gave 30 grains; Dr. Paris, 35 grains; United States Pharmacopœia, 1882, gave 35 grains; United States Pharmacopœia of 1870, 36 grains; Peter Squire, 37 grains; and Dr. Attfield, 40 grains. Theory, he said, would require 35-714 grains; but as commercial tartarated soda is generally faintly alkaline, it required, as a rule, 36 grains to make the solution neutral. Reviewing these diversities, and bearing in mind the results of his experiments, most of which were obtained before the publication of the "Extra Pharmacopœia," he had in that given a formula in which 36 grains of tartaric acid were ordered; and as seidlitz powders were often medically ordered by prescribers, who expect seidlitz powders to have no variation, he thought it was necessary a formula for seidlitz powders should be inserted in the next British Pharmacopœia.

Mr. Martindale said there were what he might term "fancy" seidlitz powders sold, flavoured with lemon or ginger, while others add $\frac{1}{10}$ grain of tartar emetic to each, on the ground that, as Dr. Paris states, "this quickens the operation of saline cathartics." "Extra-strong" seidlitz are also sold containing 60 or 120 grains more of tartarated

soda in each; for these, too, he thought an authoritative formula should be given.

The PRESIDENT said the word "foam" was new in connection with seidlitz powder, but they now knew what it meant.

Mr. ATKINS thought they ought specially to thank Mr. Martindale for giving practical results on a matter which occurred in the everyday life of a pharmacist.

Mr. KINNINMONT said in Scotland they sold twenty doubles for one of the single seidlitz. He had noticed in Eno's Fruit Salt that it presented something like that which appeared in the first seidlitz powder Mr. Martindale had exhibited, and it struck him that Eno's Fruit Salt was the ordinary form of seidlitz powder with an excess of alkali. This new word foam was a capital one. Martindale's foaming seidlitz powders he was sure would have a great success.

Mr. MARTINDALE replied that he thought Eno's Fruit Salt contained ordinary chlorate of potash. With regard to the double seidlitz, they were rarely asked for, certainly not so much as in Glasgow.

THE PUNGENT PRINCIPLES OF PLANTS.

By John C. Thresh, Pharmaceutical Chemist.

In this paper the author gives the results obtained in the examination of the pungent principles of several well-known drugs. On account of the great difficulties in obtaining these substances in a state of purity, and for other reasons, further investigation of the matter has been abandoned.

The active principle of grains of paradise ("Paradol") can be obtained of constant composition, the mean of three combustions quoted giving—C, 70·04; H, 9·18; O, 20·78; agreeing best with formula, $C_9H_{14}O_2$, requiring C, 70·13; H, 9·09; O, 20·78.

Paradol is therefore an isomer of capsaicin, the active principle of cayenne, previously isolated by the author.

Gingerol, the pungent principle of ginger, is most probably a homologue of paradol, with the empirical formula C_5H_8O . Samples of gingerol obtained by different processes, however, did not give identical results on combustion, but the further the purification was carried the more nearly did the result agree with those required by the above formula.

	Mean of 2 Experiments	C_5H_8O
C	.. .. .. 71·43	.. .. .. 71·43
H	.. .. .. 9·73	.. .. .. 9·52
O	.. .. .. 18·84	.. .. .. 19·05

The active principles of pepper and galangal were only obtained in a state of approximate purity.

All these pungent bodies are readily oxidisable, yielding with nitric acid, resins, fatty acids, or the products of their oxidation (succinic acid, &c.), and oxalic acid. With chromic acid gingerol yields acetic and caproic acids, and a neutral volatile matter not examined. Paradol yields little or no acetic acid, but formic and caproic acids, together with a little of the one or two next higher homologues.

Alphinal, the active principle of galangol, under the same circumstances yields an acid whose silver salt contains 43 per cent. of silver; hence most probably it is oetoic acid $C_8H_{14}O_2$.

Capsaicin, paradol, alphinal, and gingerol, in dilute alcoholic solution, reduce silver salts with production of a metallic mirror. Treated with caustic alkali, the pungency is rapidly destroyed, and a resin salt of the alkali is formed.

Whilst the first may be sublimed in small quantities, the others begin to decompose when heated to a little over 100° C. Capsaicin is crystalline, the others are viscid uncryallisable fluids. They form amorphous compounds with barium, lime, lead, and other salts, but these could not be obtained of constant composition.

The PRESIDENT said Mr. Thresh had undertaken an investigation probably the most difficult possible. It was a matter of congratulation that he had shown himself qualified to carry it on to a successful issue.

Mr. NAYLOR said he felt personal gratitude for the laborious investigations and valuable results Mr. Thresh had communicated to the Conference. He had been compelled to abandon researches on similar bodies, as he had been unable to obtain them sufficiently pure. Mr. Thresh had now shown the way, and had made a great advance.

Mr. HORNES said it was extremely interesting to find that these pungent principles were compounds of fatty acids. Did Mr. Thresh mention the bodies with which the acids were combined?

NOTE ON A SPECIMEN OF *MYLITTA AUSTRALIS*, OR NATIVE BREAD, PRESENTED TO THE CONFERENCE BY MR. A. P. MILLER, OF HOBART, TASMANIA.

By William Southall, F.L.S.

MR. MILLER having presented to the Conference a specimen of native bread weighing about 39 lbs., it was thought desirable that detailed information should be given to the Conference. A drawing was exhibited showing it to be a regularly rounded mass with rough black adherent bark. It is very heavy. The late James Backhouse, a missionary, mentions "native bread," a tuber found in Tasmania, often reaching the size of a child's head. In taste it resembles boiled rice. Cooking makes little change in its character. When asked how they found it, the natives always answered, "Rotten tree."

It has a hard outer covering: within are regular pits, generally hexagonal, composed of white, opaque, corky substance; the pits are filled with a semi-transparent pulp. When drying the interior becomes horny.

The microscope shows that it consists entirely of long twisted filaments, thickly set and branched.

Chemically it has been found, like Indian bread, to consist of nearly pure pectine.

Some observers have suggested that it is a gall, others that it is the root of a phænogamous plant. There is little doubt that it is a fungus, but no trace of fructification has ever been observed. Mr. Berkely described it in Hooker's "Botany of the Voyage of the Beagle" under the name of *Mylitta australis*. He considers it to be an ally of the true truffles.

In other countries somewhat similar productions are used as food. The Tuckahoe, or Indian bread (*Pachyma coniferarum*), is found in Carolina and other parts of the United States in large masses. Mr. Berkely considers it totally distinct from the native bread of Tasmania. It is used as food, and is an antidote for some of the more active mineral poisons.

In China two kinds are known—Foo ling, which is allied to *Mylitta australis*, and Choo ling, which is identical with Indian bread. Foo ling is made into cakes, which are considered both nutritious and medicinal; large specimens are used as amulets. The name Foo is derived from the Chinese for fir tree. The name Choo ling refers to pig's dung.

Mylitta australis may be regarded as the mycelium, or scleroloid-mycelium of a fungus, of which the other stages of growth have never been observed.

The PRESIDENT remarked that the specimen had been presented by their local secretary in Tasmania, and was one of the first-fruits of their colonial policy.

Mr. HOLMES remarked that the specimen of *Mylitta lapidescens* alluded to came from Jamaica. There had recently been a note on it in the "Gardener's Chronicle." He hoped their colonial friends would try and investigate the perfect state of the fungus. It had been one of the puzzles of fungologists for many years.

Mr. ATKINS asked whether the paper mentioned if the fungus was used as food, and also if there were any superficial indications of the fungus' growth. There was no sign on the surface of the ground where truffles were growing in his own neighbourhood, and dogs were kept which were highly trained to find them by scent. They were rewarded by a piece of bread for each truffle discovered. He had been told by a gentleman from Japan that a peculiar truffle was there hunted for by trained dogs. It was prejudicial to health till boiled, when it became nutritious and palatable.

The PRESIDENT hoped that further specimens would be received which they might cut up. It would be a pity to destroy such a noble specimen, although it would be a great problem to know where to keep it, as the Conference was a migratory body.

Mr. PLOWMAN replied to the questions so far as they were answered by the paper, and read an explanatory letter from Mr. A. P. Miller, of Hobart:—"I can say little about the native bread, except that the aborigines of Tasmania were very fond of it and considered it a delicacy. There is neither leaf, branch, root, or stem shown above ground to indicate where it may be dug for successfully, but after rain the natives used to discover the spots by cracks of a peculiar nature in the surface, which indicated its locality."

Mr. PLOWMAN explained that Mr. Southall had been prevented by ill-health from undertaking fuller chemical investigation.

The President then vacated the chair to Professor Redwood, in order to read his own paper.

NOTES ON CERTAIN ANHYDROUS OILS.

By John Williams.

THE author had occasion a few months since to prepare for special purposes some perfectly anhydrous and colourless essential oils. Oils of orange, lemon, bergamot, origanum, geranium, lavender, and peppermint were operated upon. To re-distil by steam was not suitable, and the heat of a naked gas-flame would certainly overheat the oils. The process devised was to employ a bath of fusible metal, an alloy of bismuth, cadmium, tin, and lead, melting at 140°, being employed. A mixture of aqueous vapour and oil comes over first, then the anhydrous oil, and lastly high-boiling oils, some rising to 240° C. or upwards. There are left behind in the retort some curious resinous or oleoresinous bodies, probably the products of oxidation of the natural oils. These have generally, but not always, an offensive smell. Usually the proportion of anhydrous oil obtained is over 50 per cent. Sometimes redistillation is necessary to obtain a colourless oil, and in the case of geranium oil this was not obtained by that means. Mr. Williams thinks the anhydrous oils are of finer odour than those from which they are obtained, and he also believes they will not be liable to oxidation if all traces of water are removed from them. This latter theory he will test by keeping. If by such means a perfectly-keeping oil can be obtained an important result will have been arrived at.

Professor REDWOOD (speaking from the chair) said they were all much obliged to Mr. Williams for his very interesting communication. It held out prospects for the attainment of further results which might be looked for as very important in connection with some of their essential oils.

Mr. DOTT had just the least suspicion that the temperature employed might have caused some decomposition. He should like to ask if it was attempted to distil the oils *in vacuo*, whether it would have avoided the possibility of decomposition by the high temperature.

Mr. SCHACHT asked if this subject had not been already treated by Dr. Tilden; and, if so, he wished Mr. Williams to say whether he could confirm the impression which he had in his mind with reference to many of those essential oils—that they were not simple bodies. He thought that the majority of them, if not all, contained a hydrocarbon pure, and also a compound oil containing oxygen. He was speaking from recollection, but he believed that Dr. Tilden was of opinion that the odorous oils were chiefly those which contained the oxygen. Mr. Williams had omitted to say in his results which fraction was truly oil of lavender. Mr. Williams said the boiling point was considerably lower at the first part of his process. But it was very desirable that they should start with more exact knowledge than was contained in this paper. Mr. Williams said that the odour was somewhat stronger at the end than at the beginning of the process. If the odorous principle belonged to the oxygenated oil, might it not be possible that a change was taking place, and a large portion might be contained in the resinous product left in the retort.

Mr. PLOWMAN wished to ask whether Mr. Williams had conducted any experiments to prove that the substances were brought over by steam in the distillation of the oils, or if they were produced by oxidation or keeping the oil, or during distillation at high temperatures.

Mr. ELMORNE observed that it would be interesting to know the specific gravity, as compared with that of the original sample. He had friends closely connected with the business, and was told that nearly all essential oils sold in commerce contained an added hydrocarbon, a turpentine, which had been rendered entirely inodorous.

Mr. WRENN said he had worked on each of the oils mentioned by Mr. Williams. He re-distilled the whole of his essential oils in an ordinary glass retort which was covered with asbestos. He dried his essential oil with calcium chloride previously to re-distillation; in fact, the oil was submitted to three or four distillations. The first distillate came over at a very low boiling-point, and with a light specific gravity. The boiling-point and specific gravity gradually rose to the end. He always noticed that the first distillate had the best aroma, and most resembled the primary product. The residual substances spoken of were, in his opinion, due to oxidation, and not to the mechanical carrying-over by steam. He would like to ask Mr. Williams how he determined his boiling-point.

Professor REDWOOD himself had had some practical experience in the attempt to produce some of these essential oils in an anhydrous condition. The fusible-metal bath which he had been in the habit of using was a most excellent means for ensuring a constant temperature tolerably high—higher than that of boiling water—and he had used it especially in regard to the distillation of some essential oils, and more particularly the oil of lemon. All who had had experience in reference to oil of lemon were aware that it was one of those essential oils the physical characters of which were liable to very great variation when it had been kept for any length of time. In fact it might be said that some persons who had occasion to use oil of lemons largely as a flavouring agent would be willing to pay a very large sum of money indeed to anyone who would indicate the means by which

oil of lemon could be made to retain its natural odour such as it possessed when it was first obtained. The best oil of lemon was obtained by mechanical means, by which the oil-vessels were fractured and the oil pressed out. Some portion was subsequently obtained by distillation with water, but that was not of the best description; and oil of lemon obtained by the former means had the extremely fragrant odour which was possessed by the lemon-peel, but which it was incapable of retaining for any length of time. Exposed to the air, it lost that flavour, and it would acquire an odour somewhat allied to oil of turpentine, so much so that many persons formed the opinion that this and other essential oils had been adulterated with oil of turpentine where no such admixture had taken place. It was a simple change which occurred. These essential oils contained a hydrocarbon and an oxidised oil, and the hydrocarbon oil present in these oils had the same essential composition as oil of turpentine; and a change occurred in which these oils acquired the flavour of turpentine to a greater or less extent. It appeared to him that in any process such as Mr. Williams had adopted what was obtained really was a product, not an educt; that was to say, there was some chemical change which took place through the distillation. There was a certain amount of physical evidence of this. In the oil of lemon they had exhibited on the table three products—the distillate obtained at the lowest temperature, the distillate at the highest temperature, and the residue left in the retort. The first thing they observed in reference to this was that no one had the flavour of the original oil of lemon—no one of them had a flavour approaching to the ordinary oil of lemon in fragrance and sweetness. In point of fact, they would say in reference to the residue left that it was disagreeable in odour, and none of the others could be used as flavouring agents. His acquaintance with distilled oil of lemons commenced many years ago, when a house in Bond Street used to sell an article for removing grease stains from ladies' dresses, which, upon being examined, was found to consist of oil of lemon with alcohol and a little camphor. Taking the oil in its ordinary condition, that would not answer the purpose, because there was the resinous matter, which would be left when volatilisation took place, which would leave a stain worse than the original stain, and distilled oil had to be used. What he wanted to find out was this—that, taking the products of the distillation, they were none of them comparable to that of the original oil. Put any of them, or all of them, together. Did they produce what they started with? Far from it. If they took the distilled oil, it was not equal to the original oil in flavour. If they added what was left in the retort, did that make it better? No; much worse. Therefore, it was quite obvious that there were chemical changes taking place from the process of distillation which materially affected the physical characters of the oil. The same thing applied to others of those essential oils. It was a subject which some of our young chemists might take up with advantage, to show how the essential oils—especially such an oil as essential oil of lemons—could be rendered permanent without its flavour being destroyed by a process of distillation. It would be a source of great profit to anyone who could devise means by which permanence could be given to those oils without impairing their flavour.

Mr. WILLIAMS, in reply, said the object of his little "note" had been misunderstood. This was not a research, and he did not call it a paper. It came about in this way. He had a customer who ordered a certain number of essential oils, which were to be anhydrous and colourless; and half the order was executed before it occurred to him to give the results in a note to the Conference. He did not attempt to make a report on these oils. He wanted to elicit information himself from the meeting as to whether the residues were contained in the oil, or whether they had been produced during the distillation. The distillation having been effected in the way which he had mentioned would lead him to suppose that these residual oils were contained in the original oils; but he was not certain. He was aware of Dr. Tilden's researches, but he was not attempting to supplement them in this mere "note." His real reason was to ascertain something definite about these residues. He quite agreed that if they mixed the three together they should not get the original essential oil; therefore, a change had occurred. Originally he thought of bringing samples of the oils—light boiling, and original oils—but he thought that really, for a note of this kind, it was not worth while.

ON TINCTURE OF QUININE.

By R. Wright.

THE process of manufacturing tincture of quinine involves a chemical decomposition, the sulphate of quinine reacting with the lime-salts in the tincture of orange-peel to form calcium sulphate and a salt of quinine with an organic acid.

An approximate estimation of the amount of calcium salts present was made in orange-peel dried by the author. The percentage amount of ash was found to be: In the inner peel, 4·8; in the outer peel, 6·5; one-half of each quantity being soluble in water.

By a series of experiments it was found that the solubility of quinine sulphate in proof spirit, sp. gr. ·920, at 60° Fahr., was 5·7 grains in 1 oz. at 60° Fahr. The British Pharma-

copocia requires the presence of 8 grains of quinine sulphate in each ounce of tincture. Part of this is decomposed by the calcium salts and converted into what is probably a more soluble compound; but it was found that the undecomposed sulphate amounted in two cases to 5·7 and 6·3 grains per oz. Unless an abnormal quantity of organic calcium salt is present in the tincture used, the quantity of undecomposed sulphate remaining will be so great that in cold weather a portion of it will inevitably crystallise out. This was actually observed in one case where the tincture had been kept for some time at 40° Fahr.

After many unsuccessful attempts, the acid present in orange-peel was isolated and identified as citric acid, probably existing in the peel as acid calcium citrate.

Over thirty samples of tincture of orange and tincture of quinine from various sources were examined as to alcoholic and alkaloidal strength. It was found that the sp. gr. of tincture of orange should be between ·930 and ·934, and should not be higher than ·940; that tincture of orange is always acid, but tincture of quinine free from added acid is neutral to test-paper; that the sp. gr. of tincture of quinine prepared from tincture of orange of full alcoholic strength will be about ·934, and should not be higher than ·945, and that the alkaloidal strength of commercial tinctures of quinine is very rarely that required by the Pharmacopœia.

Tincture of quinine should be a neutral, concentrated, and uniform solution of quinine. The present formula is unsatisfactory. The use of freshly-precipitated quinine or the neutral or soluble sulphate is equally so. Hydrochlorate of quinine, however, answers admirably. It is easily soluble in tincture of orange, no precipitation takes place, and the solution is stable. It should be introduced into the next Pharmacopœia for this purpose. The suggestion has been previously made by Mr. Whitfield and Mr. Martindale.

The PRESIDENT, in proposing that the thanks of the meeting should be given to the author, said that his results were noteworthy, and corroborated those of previous investigators.

Mr. MARTINDALE could corroborate the author's results. Hydrobromate of quinine was perhaps better than even the hydrochlorate. Both were useful for dispensing purposes, and he hoped the editor of the Pharmacopœia would introduce one or the other into the new edition.

Mr. ELBORNE said he had purchased several of the samples of tincture referred to.

Mr. BORLAND said that he was convinced that a good tincture of quinine could not be prepared by the Pharmacopœia process, even if proof spirit of proper strength were used. For some years he had used hydrochlorate of quinine for making the tincture with satisfaction to himself and benefit to his customers.

NOTE ON "CHINA BICOLORATA," OR TECAMEZ BARK, WITH SUGGESTIONS AS TO ITS PROBABLE BOTANICAL ORIGIN, AS INDICATED BY ITS BOTANICAL, CHEMICAL, AND MICROSCOPICAL CHARACTERISTICS.

By John Hodgkin, F.I.C., F.C.S., Medallist in Chemistry, University College, London.

THIS bark comes from Tecamez, or Atacamez, which lies west of Harra on the western declivity of the Cotochaca, in Ecuador. Here it was discovered in 1793 by Dr. D. Brown. It was recommended as a useful tonic by Dr. Bresa, of Padua, in 1824. Authorities on cinchona barks have referred it to a *Cinchona* or *Exostemma*, to *Hemostomum* or *Pinkneya*. There is a greater probability that it is a *Remijia*.

Dr. A. Vogl has pointed out that the microscopical structure of the bark closely resembles that of *Remijia pedunculata*, or cuprea bark. Humboldt, who saw the tree, believed that it was a *Cinchona* or *Exostemma*. The genus *Cinchona* at the time included the *Remijias*. In Lambert's illustration of the leaves of the Tecamez bark, the leaves are of a peculiarly pointed form, closely tallying with the form of the leaves of *Remijia pedunculata*, as figured by Karsten. These fragments of evidence seem never to have been noticed together.

Small parcels of a bark very unlike ordinary cuprea bark have been imported with the latter. It seems to come almost midway in character between *China bicolorata* and *R. pedunculata*.

The analysis of the bark gives results which contradict the experience of previous observers. It contains chinovin and

chinic acid, which were actually identified, also quinine ·255 per cent., equal to 34 per cent. of quinine sulphate, cinchonine ·06, quinidine ·05, and amorphous alkaloids ·39. These are *Cinchona* or *Remijia* alkaloids, and the absence of cinchonidine is negative evidence in favour of the *Remijia* theory. The conclusion can hardly fail to be that the *China bicolorata* is a true *Remijia*, and it is suggested that its botanical source should be known henceforth as *Remijia bicolorata*.

The PRESIDENT was sure that the thanks of the meeting would be given to the author for his paper, which was intrinsically interesting, and was made more so by the fact that he was connected with the firm of the late Mr. J. Elliott Howard.

Before the discussion was taken, the President suggested that they should read a paper by Mr. David Hooper, late student in the School of Pharmacy, and now appointed Quinologist to the Indian Government.

ANALYSIS OF SOME OLD CINCHONA BARKS.

By David Hooper, F.C.S.

THESE barks are four specimens given in 1874 to Dr. De Vrij by Mr. McIvor, late superintendent of the Madras Plantations. They are marked in Mr. McIvor's handwriting :—1, Mossed bark of *Cinchona officinalis*, contains no quinine; 2, renewed bark of *C. officinalis*, var. *Uritisinga*; 3, renewed bark of *C. pubescens*. 1 proved to contain ·84 per cent. of quinine better than it was said to be, but very poor for an *officinalis*; 2 is peculiar in containing 2 per cent. of quinidine, more than has ever before been observed in this variety, or even in *C. Ledgeriana quinidifera* or *C. Calisaya*, var. *Josephina*; 4—*pubescens*—yields 4·13 per cent. of quinine, 6·98 per cent. total alkaloids, and agrees substantially with an analysis of this variety published this year by Dr. Paul. The bark of *C. pubescens* has many recommendations for a place in the British Pharmacopœia.

The thanks of the meeting being voted,

Mr. WILLIAMS said, in reply to Mr. Naylor, that Mr. Hooper gave no particulars of his methods of estimating alkaloids.

Mr. ELBORNE remarked that cuprea bark as at present imported seemed to be yielded by two species, *Remijia pedunculata* and *R. Purdiana*. This paper seemed to add a third species, *R. bicolorata*, if the latter bark comes in any quantities and from the same part of the world.

Mr. PLOWMAN quoted from the paper to show that it came only in very small quantities from Ecuador.

SESAME OIL AS A BASIS FOR LEAD PLASTER.

By T. Maben, Pharmaceutical Chemist.

THIS paper forms a report supplementary to one read at the last meeting of the Conference, on the "Suitability of Sesame Oil for Pharmaceutical Purposes." Of two reports on the same subject, that by Mr. Conroy expressed an adverse opinion as to its use as a basis for lead plaster, while Mr. Maben had come to an opposite conclusion. The question being thus left in a somewhat doubtful position, Mr. Maben had again taken it up, and prepared samples with a view to show that the oil can be used for this purpose.

The specimens were prepared in the following proportions : No. 1, as B.P.; No. 3, with lead oxide increased 10 per cent.; No. 5, lead oxide increased 20 per cent.; No. 6, 25 per cent.; No. 7, 30 per cent.; No. 8, 40 per cent.; and No. 9, 50 per cent.

There were also specimens of sesame plaster a year old (No. 10), and of official plaster recently prepared (No. 11), as well as a commercial specimen of the latter (No. 12).

It was evident that Nos. 1, 3, 5, and 6 were much too soft, and the same might be said of Nos. 7 and 8. A year hence the two latter might be in a condition to keep their shape in rolls even in summer, but at present the attempt would not be very successful. No. 9 kept quite well, either spread or in rolls, and in colour and consistency it is not unlike the B.P. plasters (Nos. 11 and 12). Nos. 9 and 11 were both prepared under identical conditions in the month of June. It would be noticed that the spread specimen of the latter cracked much more readily than No. 9. No. 10, in which the lead oxide would be increased at least 40 per cent., is a very fair specimen, and quite good enough to be used as a basis for

other plasters. The specimens of official plaster were not so white and friable as the plasters of commerce sometimes are. No. 11 was quite as good as No. 12, which had recently been got from a first-class house. It would obviously be unreasonable to compare any recent sesame plasters with the pure white article occasionally met with in commerce, since different methods of preparation, not to speak of the effects of age, would more than account for the difference in colour and consistency.

Mr. Maben concluded the paper by stating that he had formed a much more unqualified opinion in favour of sesame oil as a basis for lead plaster than he had been able to give expression to a year ago.

After the PRESIDENT had moved the thanks of the meeting to the author,

Mr. GERARD said he had tried numerous oils for lead-plaster, and several natural oils, other than olive, were admirably adapted for the purpose. But while it was a Pharmacopœia preparation the official process must be adhered to. He had not tried sesame oil, but had made an excellent plaster with nut oil. Lead-plaster, as prepared by the Pharmacopœia process, in quantities there ordered was a very poor plaster. It was deficient in oxide so that a neutral oleate was not obtained. Free olein was present, and the plaster turned rancid and heats. He had frequently spread 300 or 400 yards of plaster. In such quantities, when stored in rolls three or four deep in hot weather, the temperature in the middle of such a bulk became very high. The excess of olein combining with oxygen is the cause of this. Much lead-plaster sold contained mechanically-retained water, which was emulsified, and made the colour of the plaster whiter. A plaster free from water is darker and more transparent. Besides the whiter colour of the plaster, much sold by chemists, bad much sulphate of lime as a backing to the calico. This made the plaster stiffer and unsuitable for surgical dressings. It would be rejected by a surgeon, while the darker plaster would be used with satisfaction.

Mr. NAYLOR was somewhat surprised at the reflection cast on the manufacturers of lead-plaster. He had made it in quantities of 3 or 4 cwt., and there was very little difficulty in making it white by easy manipulation. In making the plaster, a little extra water is sometimes required, but this is never left in the finished plaster.

Mr. BENDER had been under the impression that the whiteness of lead-plaster is obtained by pulling, just as melted sugar is whitened.

Mr. HASSELEY some time ago set about making a little emplastrum plumbi. He took the olive oil from the cistern, the litharge from the usual jar. He boiled it, but was not satisfied with the hardness. He boiled it again and again, but still was not satisfied. He wished to make it as beautiful a preparation as possible, so he and his apprentice pulled it and pulled it for a couple of hours. Still it was a failure. He thought it might be that there was sesame oil in his olive oil cistern. He had been told that if there is carbonate in the litharge the proper combination would not be obtained. He thought the wholesale houses sent out Emp. plumbi far too hard. They get breakages and loss. If they would send it out a little softer it would be better for the customer, and much better for the young man who has to weight it out.

Mr. WRENN had seen large quantities made and had never seen water used.

The PRESIDENT remarked that the introduction of water into shellac was the method by which it was bleached. This perhaps suggested the connection of water with the whiteness of lead-plaster.

Mr. CLARKE said there was no difficulty whatever in making a very handsome white plaster, according to the Pharmacopœia process, if good oil and good litharge are used.

REPORT ON THE STRENGTH AND CONDITION OF COMMERCIAL SPECIMENS OF HYDRARGYRUM CUM CRETÀ, PILULA HYDRARGYRI, AND UNGUENTUM HYDRARGYRI.

By M. Dechan, Analytical Chemist; and T. Maben, Pharmaceutical Chemist.

ACTING on the suggestion of the *Blue List*, the authors have devoted what time they could spare to the examination of commercial specimens of the above-named preparations. They confine themselves to a consideration of "strength and condition"; methods of preparation they regarded as somewhat outside the scope of their present inquiry. We quote from the paper:—

Hydrargyrum cum Cretâ.

"The composition of this preparation has often been discussed, so often, indeed, that but for the sanction of the *Blue List* we should have hesitated to take it up. The inevitable conclusion arrived at from the analysis of specimens has been that greater or less proportions of mercuric

or mercurous oxides, or of both, are found to be present. Some of the older authorities were inclined to believe that the mercury existed only in a state of mechanical division but few would now be found to maintain that view. Pharmacists are all aware that the mercury is certain to become more or less oxidised in the course of time, though, of course it is impossible for us to say without actual analysis how far oxidisation has gone, or what oxides are formed at any stage of the history of the preparation.

"The conditions under which hyd. c. cret. is usually prepared render it all but impossible to avoid the presence of oxide. By employing an atmosphere of carbonic dioxide we might ensure the presence of metallic mercury alone, and by carefully preserving the stock reduce the oxides to a minimum; but the few retail pharmacists who make this preparation are, doubtless, of opinion that quite enough trouble is involved already without adding more, and those who purchase this drug must be content to take what the wholesale houses choose to give them.*"

The authors then describe the method adopted in their analysis. This consisted essentially in treatment with acetic acid, which removes the various oxides, and precipitating these—the mercurous as chloride by hydrochloric acid, and the mercuric as sulphide by sulphuretted hydrogen. The residue is dissolved in nitric acid, the mercury being again estimated as sulphide.

The following were the results obtained:—

Per cent. of No. 1	2	3	4	5	6
Hg 22.05	30.6	32.75	30.6	34.05	34.4
Hg ₂ O 2.2	Tr.	Tr.	0.22	0.26	1.1
HgO 4.67	1.4	2.79	1.4	1.86	1.15
Per cent. of No. 7	8	9	10	11	12
Hg 32.62	60.3	49.6	31.17	21.2	35.8
Hg ₂ O 1.95	0.17	Tr.	0.52	6.15	Tr.
HgO 2.32	0.65	0.83	0.92	2.8	1.0

The authors account for the varying proportions of mercury by the tendency of the metal to fall to the bottom of the bottle, owing to its great density. This hypothesis receives striking confirmation by specimen No. 9, which gave over 50 per cent. of mercury; this sample was all that was left in the retailer's shop-bottle. The obvious conclusion is, that the hyd. c. cret. bottles should be frequently shaken. The comparative absence of oxide in some of the specimens and the large proportion in others are interesting points. The way in which the drug is stored will doubtless have a great effect on the oxidation, and may explain why samples differ so much. The relative effects on oxidation of the preparation by the moist and dry methods, of exposure to air and exposure to light, had been considered, but it was not thought desirable to extend the paper and include these. It may be mentioned, however, that the authors have prepared hyd. c. cret. by the process of the new U.S. Pharmacopœia, which when finished had not a trace of oxide, which is more than can be said of the B.P. preparation; but it is not found that the former is more able to resist the influence of air and light than our own.

Pilula Hydrargyri.

After quoting authorities to show that the general opinion is that blue pill contains oxide, the authors go on to say that their analyses of commercial specimens tend to show that this view is not correct, provided, of course, due care has been taken in the preservation of the pills or pill-mass. In speaking of grey powder, Proctor says it has been suggested to use sugar in the place of chalk, "but it is not found that sugar in the dry state has any protecting power over the mercury;" thereby inferring that sugar in the wet state may have such a power. It is somewhat surprising that the "protecting power" of sugar has not long ere this been recognised in the case of the pill. It is well known that sugar assists certain metals to resist oxidation, and, moreover, that its natural tendency is to reduce or de-oxidise mercurial salts. This being so, it is singular that the presence of oxide in blue pill should have been so readily assumed in the absence of direct proof, and even, as in Christison's case, in spite of proof to the contrary.

* The length of time required to make grey powder must always be a difficulty in the way of its manufacture by retailers. We do know one pharmacist, however, who avers that he can make it in a quarter of an hour.

Eight commercial specimens of pill-mass had been examined, with the following result:—

Nos. 1	2	3	4	5	6	7	8	
Hg. per cent. . .	37·1	33·6	31·46	41·33	33·62	28·45	35·0	31·5

Six of the samples contained no trace of oxide. No. 3 contained 1·32 per cent. of mercurous oxide, but this specimen was so dry as to be almost in a state of powder when received. No. 4 had traces of both oxides, but this also had been so dry that it had to be worked up with water before being sold. The different percentages of mercury are for the most part explained by the dryness or moisture of the specimens. Nos. 6, 7, and 8 had been prepared with confection of roses, the others with confection of hips. The character of the excipient is determined by the colour of the acetic acid solution. If this represented the ratio of adulteration of oil hydrarg. throughout the country, it betrayed a condition of pharmaceutical morality for which the writers were not prepared. Out of curiosity they had turned up the price-lists of several of the wholesale houses from which the specimens had been obtained. Without exception they found that the adulterated specimens were quoted from 3d. to 5d. per lb. under the prices charged for the genuine; but as the cost of confection of roses is nearly double that of confection of hips, it is clear that the careless, if not unscrupulous, vendors are able to undersell their more honourable rivals and at the same time pocket a larger profit.

Unquantum Hydrargyri.

After quoting the opinions of authorities, who are somewhat divided on the question of the oxidation or otherwise of the mercury in blue ointment, the authors go on to state that their investigations tend to show that, as a rule, the mercury exists as metallic mercury only, although oxide is occasionally present, either as such or combined with one of the fatty acids. The method of analysis consisted in treating the ointment with ether till fat is removed, boiling the residue with acetic acid, and weighing the metallic mercury. Oxides are detected in the acid solution as before, and oleates by passing sulphuretted hydrogen through the ethereal solution. If care be not taken the presence of iron may mislead the operator in testing for oleate.

Twelve specimens were examined, with the following results:—

Ungt. Hydr. Fort.

Nos. 1	2	3	4	5	6	7	8	
Hg. per cent. . .	38·0	39·0	40·31	60·4	44·0	44·5	46·1	46·5

Ungt. Hydr. Mit.

Nos. 9	10	11	12	
Hg. per cent.	13·5	13·48	10·0

No. 5 contained a trace of oxide, Nos. 7, 11, and 12 traces of oleate, and No. 6 a trace of oxide, and also 0·6 per cent. of oxide combined with oleic or other fatty acid.

Their conclusion as regards the condition of mercurial ointment is that, as a rule, it does not contain oxide as such or combined with fatty acids.

The strength of commercial specimens of the ointment varies very considerably. If prepared according to the British Pharmacopœia, it ought to contain 49·5 per cent. of mercury, but it does not appear that the ungt. hyd. fort. of the wholesale houses is synonymous with ungt. hyd. B.P. Cooley states that "the ungt. hyd. fort. is generally made of mercury, 12 lbs.; suet, 1½ lb.; and lard, 16½ lbs." If this statement is correct, the low percentage of mercury in some of the specimens we examined is readily explained. In no case did we get as much as 47 per cent., and as the specimens represented the leading Scotch and English wholesale houses, it may possibly be somewhat difficult to find any 49·5 per cent. ointment in the market.

The ungt. hyd. mit. seems to be prepared according to varying formulae. The usual strength is 1 of strong ointment to 2 of lard, and such seems to have been the way in which two of the four ointments we examined had been prepared. The other two, however, must have been 1 to 3, a strength which, to say the least, is somewhat weak, more especially when the strong ointment is rather weak to begin with.

The authors think their results justify the conclusion that the care and accuracy which ought to be characteristic of the

profession of pharmacy seem to be conspicuous by their absence. It is quite true that preparations in which metallic mercury is found are apt to vary more than most others in the Pharmacopœia, but this ought not to be an excuse for an evidently systematic arrangement, whereby a weaker article, as in the case of blue ointment, is intentionally supplied. Some time ago a case was before the Courts under the Adulteration Act, when a chemist was charged for selling mercurial ointment containing 16 per cent. of mercury. This case was dismissed, but the result would have been more doubtful had any of these samples of weaker ointment been under discussion.

Wholesale houses are in some cases to blame for these weak specimens, as the majority of chemists buy their mercurials ready made. They thus deliver themselves, so to speak, into the hands of the makers, and where there is little opportunity and probably less disposition to be critical, there is no wonder that things are not always kept up to the pink of perfection.

The PRESIDENT said that, supposing these results were correct, the state of things was anything but creditable to pharmacy and to their present position. He hoped that they would have an explanation, because there were points in the paper which proved that it was very necessary that such bodies as the Pharmaceutical Conference and Pharmaceutical Society should be very active, and not cease in their endeavours to promote the high standard and wellbeing of true pharmacy.

Mr. SCHACHT said there was a great deal in the paper which deserved their attention, and they ought to be content to receive any amount of criticism on the way in which they conducted their business. At the same time, it was just possible that some of the severe strictures were scarcely deserved. In the first place, with every desire to have a perfectly sure and correct hyd. cum creta, the ordinary dispensing chemist was in difficulties. It would be highly desirable that as many as possible should prepare their own. It was just one of those things that they had better not leave to the wholesale gentlemen to do for them, and particularly for this reason, that it had been acknowledged and declared publicly that they prepared grey powder in large quantities by machinery, and that their establishments enabled them to employ that with advantage and economy, and turn out a better article than was possible on a smaller scale. If it came to this, that a certain large quantity of these materials was put into a tub with a boulder, and the tub fixed to a piece of machinery and allowed to be the victim of the tender mercies of that machinery for an indefinite length of time, an element like mercury, which had a certain kind of affinity for oxygen, was placed under favourable circumstances for effecting that combination; and though they might get a finely-divided article at the end of the process they would stand a very great risk of that mercury being converted into oxide. It required only a moderate amount of labour to make a moderate quantity of grey powder; and if their experience was like his own—that the use of mercurials was rather less than it had been—a moderate quantity lasted a good long time. He would make a candid confession, that he unexpectedly found in his own establishment grey powder containing a considerable quantity of oxide of mercury, when he was innocent of any intention of having anything but a perfect article in his possession. He thought that these critics ought to be very careful not to err themselves, and when they give the results of the exact quantities of mercury traceable in mercurial ointment it was unfortunate that they did not take into account that which was bound to occur, viz., the combination of the fatty acid and the mercury. They appeared, too, to have overlooked the fact that mercury in combination with fatty acid might be perfectly soluble in ether. Some years ago he made experiments on nitrate of mercury ointment, and he found the mercury had entered into a fatty compound which was absolutely soluble in ether.

Mr. PLOWMAN said that the authors recognised the fact that oleate of mercury was soluble in ether; and they stated that "any oxides that may be present in the acetic acid solution are estimated in the manner already described, and oleates are detected by passing sulphuretted hydrogen through the ethereal solution, oleate of mercury being slightly soluble in ether." Then, in another paragraph, they stated "that of twelve specimens examined, seven were quite free from oxide or oleate, two had traces of oxide, and four contained small proportions of oleate." Apparently the authors of the paper did not think the quantity important enough to estimate or give percentages. In speaking of pil. hyd. the authors said that they could not find any trace of oxide. It was not a subject that he had investigated himself; but he remembered being present at an evening meeting of the Pharmaceutical Society, when Mr. Harold Senier read a paper, and found evident traces of the oxide of mercury, and the experiments pointed to the fact that oxides increased notably with age. In the specimens then analysed, only eighteen hours after manufacture, Mr. Senier found no oxide, but a few days afterwards he found oxide, and more and more as the time went on. In the discussion that ensued he believed Professor Redwood took an opposite view to Mr. Senier, and thought with Mr. Schacht that the making of these things by machinery had a considerable influence on the proportion of oxide; that if made by itself the proportion

would not be great, but if made by the process described by Mr. Schacht it would be very considerable.

Mr. TYRER said that these compounds of mercury had much interest for him, and he was inclined to agree with the conclusions of Mr. Schacht and Mr. Plowman; but, without endorsing the strictures of the authors of the paper, he could not help thinking that the wholesale manufacturers had been hardly dealt with. For the last twenty-five years he had had extensive opportunities for examining the scientific conditions under which the articles referred to were produced; and he could say that the element of time was a consideration which ought never to be left out of view by a manufacturer. With regard to the oxidation of grey powder, he knew no instance of grey powder, made by the old-fashioned method on a large scale, with a large mortar and pestle, in which the results differed from the newest method of mechanical preparation of this compound. A change took place at the end of a month, and still further changes in two months and three months; and they might go on to a still further point, to where oxidation ended. There was no reason, if grey powder deteriorated in the manner described, that it should not be put up in small bottles, but of course the extra cost would have to be paid for. He would consider a manufacturer exceedingly foolish to neglect his business in such a way as to leave himself open to the strictures in this paper. The question of fatty compounds—the oleates—is one that had more than a passing notice at the hands of the authors of the paper. Their account of the analysis of the ointments was very remarkable. And in that connection he might be allowed to refer to the paper on the filtration of lard. Mr. Naylor came under some strictures for his ointments, but he thought that Mr. Naylor's remarks on rancidity deserved more attention than they had received, and for this reason, that if the lard were acid there would be a tendency to the formation of fatty compounds. With regard to the mechanical method of making these preparations, he was new-fashioned enough to see its advantages, and yet to believe that there was nothing like the work of a diligent strong arm, with care and patience. With regard to the pil. hyd., they ought to be thankful to the authors of these papers. His own experience showed that the methods of analysing the preparations of mercury were accurate and reliable, and could be practised behind the counter of any intelligent pharmacist; and he hoped that in their future Pharmacopeia the tests given would be such as could be applied by men of ordinary capacity. With regard to the authors' method of dealing with the pill, they had given a very simple method of distinguishing between the pill made with hip or roses.

The PRESIDENT said this was not a matter of inferior importance, but really of primary importance. He should certainly like to have some explanation as to the conditions and circumstances under which the samples had been obtained.

PROXIMATE ANALYSIS OF THE RHIZOME OF ALPINIA OFFICINALIS. (HAUCE.)

By J. C. Thresh, Pharmaceutical Chemist.

ACCORDING to this analysis 100 parts of the rhizome contain

	Parts					
Volatile oil	•6					
Resin	•2					
Fat and active principle	16					
Kämpferid, &c.	14					
Other saline matters soluble in ether but not precipitated by Pb. A.	12					
Tannin	•6					
Phlobophane	12					
Other substances soluble in S.V.R.	32					
Glucose, mucilage, &c.	35					
Oxalic acid	•3					
Galengal. red.	28					
Starch	237					
Albuminoïds	26					
Moisture..	138					
Ash	38					
Cellulose, &c.	395					
	100					

The active principle could not be isolated in a state of purity, but from its properties it is shown to be allied to the active principles of ginger and grains of paradise.

IODINE IN COD LIVER OIL AND OTHER MARINE PRODUCTS.

By E. C. C. Stanford, F.C.S.

LAST year Mr. Stanford read a paper from which it appeared that in six samples of the oil the proportion of iodine varied from .000138 per cent. to .000434 per cent., averaging .000322 per cent. Mr. Stanford has since examined two more samples, one sent him by Mr. Gale, of the firm of J

Bell & Co., the other prepared by himself. The sample from Mr. Gale contained .000052 in the unfiltered, .000040 in the filtered oil, and .000200 in the marc. In his own sample the proportions of iodine were .000765 in unfiltered, .000077 is filtered oil, and .000680 in the marc. He believes, therefore, that iodine has little to do with the therapeutic value of the oil. In Anglo-Portuguese oysters Dr. Champouillon, of Paris, has stated that he found .0039 per cent. of iodine and .039 of bromine. Mr. Stanford found .00004 per cent. (4 parts in 10 millions).

In burnt sponge various observers have found from .76 per cent. of iodine and .48 per cent. of bromine to 1.636 per cent. of iodine and .59 per cent. of bromine. Mr. Stanford finds 2 per cent. of iodine in the ash of Turkey sponge, and .054 per cent. in that of Honeycomb sponge.

NOTE ON SULPHURATED LIME.

By T. S. Dymond.

FOUR processes have been suggested for the preparation of this compound:—

(1.) Heat together 100 parts of lime in fine powder with 90 parts of precipitated sulphur in a luted crucible. The product was found to contain 80 per cent. of calcium sulphide.

(2.) Pass sulphuretted hydrogen through slackened lime, or (3) slackened lime made into a paste with water, for eighteen hours. The process is troublesome, and the product contained between 5 and 6 per cent. of calcium sulphide.

(4.) Mix 7 parts finely-powdered calcium sulphate with 1 part finely-powdered wood charcoal; keep at a red heat in an earthen crucible till the black colour disappears. The resulting sulphurated lime is of a light-pink colour, and contains 58 per cent. of calcium sulphide. The last process is, therefore, the best; it is also the easiest to manage. The calcium sulphide was estimated by noting the quantity required to precipitate all the copper from a solution of 1.25 g. cupric sulphate in 50 c.c. of water, kept acid with hydrochloric acid. The end of the reaction is indicated by the addition of ammonia in excess ceasing to produce a blue colour.

The PRESIDENT opened the discussion by remarking that the paper proved that sulphide of calcium made by passing sulphuretted hydrogen through milk of lime was not the best form, and he quite agreed with that view.

Mr. TYRER supposed that Mr. Dymond's idea was to confirm the minds of wavers as to the way to obtain the best article called by the general name of sulphurated lime. His own experience coincided with that of the author of the paper.

THE ESTIMATION OF DIASTASE IN EXTRACT OF MALT.

By T. S. Dymond.

TWO processes have been proposed. One by Mr. Carl Jungk, depending on the time taken by 10 grammes of extract of malt to convert 10 grammes of starch into dextrin and sugar, estimated by the colouration produced by a drop of the reacting fluids on one drop of standard solution of iodine. This is found to be unreliable, as the reaction is not sharp. When the proportion of starch becomes small a brown colour is produced with iodine, which becomes blue if left for twenty-four hours.

The second was suggested by Messrs. Dunstan & Dimmock. 1 gramme of starch is gelatinised with 100 grammes of water; the mucilage is mixed with various quantities of a 10-per-cent. solution of malt extract, and kept at 100° F. for three hours. Each portion is then tested with iodine, which indicates clearly to which sufficient malt extract has been added to completely convert the starch. This process was found to yield good and constant results, but it requires much time and space, and many experiments must be made in each case. Dr. Wm. Roberts has proposed to make first a rough estimate of strength by the time taken to convert the starch, and a closer approximation by Dunstan & Dimmock's process. The author proposes to simplify the operation as follows:—1.5 grammes of malt extract are dissolved in 15 c.c. of water and mixed with a mucilage of 1 gramme of starch in 100 c.c. of water. The mixture is raised to 100° F., and tested from time to time by adding two drops of iodine solution to 5 c.c. and comparing with 5 c.c. of a similar mixture to which no

odine has been added. The end of the reaction is then easily noted. Very good malt extract will convert this quantity of starch in half an hour. Many commercial specimens require three hours. If a longer time is needed the extract should be condemned, as it has probably been overheated.

N COMMERCIAL PERUVIAN BALSAM AND THE METHODS FOR ASCERTAINING ITS PURITY.

By Peter MacEwan.

In this paper the writer starts with the statement that adulteration of the balsam has been more observed on the Continent than in this country, and concludes with a report on twelve samples obtained from representative sources, only one of which was adulterated (with storax). The body of the paper was taken up with a review of the Pharmacopoeial and other recognised tests. These were divided into two groups:—

1. PRELIMINARY TESTS.

Specific Gravity.—This is an important factor in the indication of impurity. Ten years ago the balsam had a specific gravity of 1,150 to 1,160, and now it is 1,137 to 1,145 according to the German Pharmacopœia, and 1,135 to 1,150 according to the U.S.P. This change is said to be due to a modification which the balsam undergoes in the course of its purification at the ports of shipment (this Journal, May, 1884, p. 254). The author recommended 1,137 to 1,150 as a standard, it being desirable to adopt a minimum which would exclude balsams contaminated with storax, benzoin, colophony, copaiba, and fixed oils, all of which lower the density.

The Sulphuric Acid Test, U.S.P., was found to be very good for detecting fixed oil and copaiba. It was pointed out that Schlickum's recommendation to use hot water is a very bad plan, because in all cases the hot water prevents the resinous mass hardening. (An abstract of Schlickum's paper on the subject was published in this Journal, October, 1883, p. 450.)

The Ammonia Test, P.G., designed by Dr. C. Grote, was also found to be exceedingly good for the detection of colophony. Five drops, shaken up with about a drachm of liquor ammoniae B.P., gives a froth amounting to about twice as much as the liquid, and if there be large percentages present, the solution gelatinises in a day. Schlickum's modification of the test was condemned.

Flückiger's Lime Test.—This consists in rubbing up 10 drops of balsam with 0·4 grm. (say 6 grains) of lime. If the balsam is pure, according to Flückiger it should not harden, but remain soft and kneadable; whereas balsam containing storax, colophony, copaiba, or benzoin, becomes quite hard and brittle. This the author denied, and gave details of experiments in proof of his statement. He had also tried Flückiger's modification of the test, which consists of adding merely a few drops of spirit to the balsam, and by this method got very hard masses with all kinds of balsam, pure and adulterated; but balsam to which 10 per cent. of castor oil had been added remained permanently soft. It was, therefore, inferred that the hardening was due to the alcohol added. The storax and copaiba adulterated balsams communicate their distinctive odours to the lime paste.

2. QUALITATIVE TESTS.

In the second part of the paper the action of solvents as a means of detecting impurity and indicating quality was considered. The odorous principle (cinnamlein) was dissolved out by a petroleum-spirit sp. gr. 710, boiling-point 65° C. If less than 41 per cent. of cinnamlein was obtained, it was inferred that the specimen was not good; but only one gave less, viz., the one adulterated with storax. More than half of those examined contained above 45 per cent., from which it would appear that our supply is of fine quality. It was pointed out that castor oil and copaiba increase the yield of cinnamlein. Schlickum states that they do so by their own weight, but the author gave proof to show that they do this only to a limited extent. The P.G. requires that the petroleum-spirit residue should not have the odour of turpentine, storax, or copaiba, and that it should not give a blue or greenish-blue

coloration with nitric acid P.G. The test has been condemned by Grote, and the author has endeavoured to show where it misleads. If the petroleum-spirit solution be not filtered the suspended particles of any kind of balsam give the green coloration, and acid, nitric, P.G. is too weak to do what is expected; but the B.P. acid (sp. gr. 1,420) gives an intense blue with copaiba and bright emerald green with colophony adulterated balsams. Other adulterants, and even pure balsam, give colorations which are not, however, sufficiently distinctive to rank as tests. Castor oil is also detected in the petroleum-spirit residue by saponifying with weak alcoholic potash and acidifying with hydrochloric acid, oily globules, in addition to crystals of cinnamic acid, separating, if there be oil present to separate.

After some comments on the chemistry of the balsam, which was considered to be much in need of revision, the bisulphide of carbon test was referred to. The U.S.P. states that three volumes of bisulphide should separate from one of balsam not more than 40 per cent. of insoluble matter. This percentage is much too high, 16 per cent. at the most being sufficient, because an admixture of benzoin increases it, and high percentage of insoluble matter is one of the best means of detecting that adulterant. It was shown that the amount of insoluble matter bears no relation to the amount of resin in the balsam. The paper concluded with some general remarks and a table of results.

NOTE ON THE PRESENCE OF COPPER IN SOME PHARMACEUTICAL PREPARATIONS.

By Mr. J. Rutherford Hill, Edinburgh.

The objects of this paper were (1st) to point out the contamination of some pharmaceutical preparations with copper, hitherto unobserved, and (2nd) to raise the question, What is the most suitable material for the manufacture of pharmaceutical evaporating-apparatus for use on a large scale?

The author's attention was first arrested by his discovery that a steel spatula, which had been accidentally immersed in inf. rosæ acid. conc., received a thick coating of copper; similarly ergotin gave a bright deposit of copper. Consequently he examined a series of concentrated decoctions, fluid extracts, and concentrated infusions by the following method, which was found to be highly satisfactory and expeditious:—

Two hundred grains of the preparation were placed in a test-tube and slightly acidulated with hydrochloric acid. A 5-inch piece of recently polished No. 36 iron wire in the form of a small coil was immersed in the liquid, which was then gently boiled for ten minutes, allowed to stand for another ten, the liquid poured off, and the wire examined. If copper were present in any appreciable quantity it in no case failed to be deposited in the iron coil. According to the amount (judged optically) so given, the author arranges certain preparations in their relative degrees of contamination.

Copper deposit abundant with ergotin, inf. rosæ ac. conc., and chiret. conc.

Copper deposit very distinct with inf. cuspar. conc. and ext. cinch. liq.

Copper deposit distinct with inf. cinch. conc., ext. ergotin liq., inf. digital. conc., senega conc., dec. sarsæ co. conc., inf. serpentaria. conc., and dec. pareiraæ conc.

Copper deposit less distinct with inf. gentian co. conc., ext. sarsæ liq., ext. taraxac. liq., senne liq., dec. scoparii conc., inf. cascara. conc., columba conc.

Copper deposit perceptible; inf. uvæ ursi conc.

Copper deposit none; inf. quassia conc.

The author reasons from the above that substances containing principles belonging to the tannin group are most liable to contamination, and that the large contamination of ergotin is due to the phosphoric and mineral acids contained in ergot. He shows that in all cases in which copper was detected, copper pans had been used in their preparation; while those in which porcelain or enamelled iron vessels were used were not contaminated.

He then discourses on the physiological effects of the contamination in a debatable manner, and instances ergotin as a substance in which this contamination is positively injurious, the substance being used for hypodermic solutions, so that the copper is conveyed directly into the blood. This he holds to be the cause of the irritation which accompanies

such use of ergotin, and instances one make of the preparation which does not cause irritation, and which contains no copper.

After glancing at the subject from the Adulterations Act point of view, the author concluded with some remarks on evaporating-pans, to the following effect:—

1st. That steam-jacketed copper pans are not suitable for evaporation, except they be jacketed only on the lower part, as recommended by Dr. Symes. The author holds that contamination with copper takes place mainly at the surface-margin, where the liquid, the metal, and the atmosphere meet. Here oxidation takes place, the oxide of copper produced being dissolved by a fresh portion of liquid.

2nd. Copper vessels lined with tin, recommended by Mr. O. Corder, or enamelled-iron vessels which Mr. G. F. Schacht speaks highly of, would be much more suitable than copper alone. Best of all are block-tin vessels, which are in use in some establishments, the only objection to them being the initial expense. This part was merely suggestive, and for the purpose of raising discussion.

The PRESIDENT expressed the thanks of the meeting to the author. He was surprised to find that ergotin was so active in dissolving out the copper. He would have liked to have heard some details of its manufacture.

Mr. DOTT said the paper was important. But, as a matter of fact, no other metal can be used practically on the large scale in pharmaceutical utensils. The author's results indicate the need of some coating.

Mr. NAYLOR remarked that copper contamination may easily be avoided by coating the copper with tin.

The PRESIDENT: But sometimes the tin gets worn off.

Mr. PLOWMAN said Paul and Kingzett's conclusion as to the harmlessness of copper administered internally was by no means uniformly adopted. He was not at all inclined to agree with those gentlemen.

Mr. PLOWMAN called attention to the grant of books from the "Bell and Hills Library Fund" to the newly-formed Hastings Association of Pharmacists. He said that the visit of the Conference had really brought the Association into life; it had been practically formed before, but the visit of the Conference had caused its actual birth. A good deal of the credit was due to Mr. Rossiter, the local secretary.

The PRESIDENT had great pleasure in handing the books over to the Hastings Association, and he hoped they would form a nucleus of an extensive library.

Mr. ROSSITER, in reply, thanked the members of the Conference for the honour done to Hastings on that occasion. He must say that Mr. Bell and others had been exceedingly energetic in the matter.

NEXT YEAR'S MEETING.

Mr. BINGER then referred to next year's meeting of the Conference. It was intended to accept the kind invitation of their friends in Aberdeen to hold the meeting there when the British Association visited the granite city. He had had correspondence with Mr. Strachan, the Honorary Secretary of the Aberdeen Chemists and Druggists, and Mr. Kay had come from Aberdeen to renew the invitation personally.

Mr. KAY said it would give the chemists and druggists, and also the medical men, of Aberdeen much pleasure to receive the Conference next year. They had a Chemical Association in Aberdeen, which had been in existence for fifty years, and there were some members now living who had assisted Mr. Jacob Bell in forming the Pharmaceutical Society. He could promise them a hearty welcome.

Mr. BINGER moved, and Mr. PLOWMAN seconded, that the kind invitation be accepted, and this was cordially received and carried.

The Conference then proceeded to the election of officers. A list was handed round for each member to sign, and Mr. Clarke and Mr. Radley were appointed scrutineers.

The PRESIDENT took advantage of the interval to say that the list showed that they were going to lose one of their much respected general secretaries, Mr. Benger, who had served the Conference so well for the last thirteen years. Personally he was very sorry to lose Mr. Benger, to whose care

and forethought much of the success of their annual meetings hitherto was due. Unfortunately, misfortunes did not come alone, for they were to lose the services also of Mr. Ekin, who had acted as treasurer for the last seven years. Mr. Ekin felt it impossible to carry on the duties of treasurer, and he reluctantly retired. The treasurer's office could be more easily filled than the general secretary's, for the former's work was limited to a short period only, but the latter's extended over several months, and required constant vigilance. He could only express his own regret, and that of the General Committee, in the loss they had sustained by the retirement of Mr. Benger and Mr. Ekin. He concluded by moving a vote of thanks to the two gentlemen.

Mr. SCHACHT said Messrs. Benger and Ekin were amongst his oldest professional friends, and it gave him very great pleasure to second the vote of thanks for their labours in connection with the Conference. Whilst Mr. Benger was an honorary secretary the other officers felt that there was no necessity to think about the business details of the Conference, for they knew that everything would go well so long as Mr. Benger and Mr. Plowman were joint secretaries, and had the arrangement of affairs. Notwithstanding the abilities of the gentleman (Dr. Thresh) who was to succeed Mr. Benger, it remained to be proved that Mr. Benger's successor would be his equal; and it would be the duty of every individual member of the Conference to exert himself more in the future than in the past.

Mr. PLOWMAN said he should like to add a few words as to the personal aspect of the question. When he undertook the office three years ago of joint secretary, he did so with considerable diffidence, but his hesitation was entirely removed after a brief experience of his colleague, who took off burdens that should have fallen on his own shoulders, and thus he had been enabled to do the work with very little trouble or inconvenience to himself. He had worked with Mr. Benger in perfect harmony, and he was pleased to say that their intercourse in Conference matters had closely cemented a friendship which he was proud to say existed before, and he hoped would last as long as either of them breathed.

The vote of thanks to Messrs. Benger and Ekin was then cordially adopted.

Mr. BINGER, in returning thanks, said that he was overcome by the kind words that had been said about him. His thanks were a great deal due to the Conference; and the mere fact of having served rather actively a body which had the interest of pharmacy at heart, and had done so much to promote pharmacy and good feeling and fellowship among pharmacists, was more than full compensation, and the work itself had brought its own reward. He looked forward with much confidence to the future success of the Conference in the hands of his successor and Mr. Plowman: and he should certainly look back with great pleasure to the thirteen years he had served them as secretary.

Mr. CLARKE here announced that the officers on the list had been all duly elected, and were as follows:—

President.—J. B. Stephenson, Edinburgh.

Vice-Presidents.—F. Baden Benger, F.C.S., Manchester; M. Carteigie, F.I.C., F.C.S., London; C. Ekin, F.C.S., London; J. P. Kay, Aberdeen.

Treasurer.—C. Umey, F.I.C., F.C.S., London.

General Secretaries.—S. Plowman, F.I.C., M.R.C.S., London; J. C. Thresh, F.C.S., F.C.S., Buxton.

Other Members of Executive Committee.—S. R. Atkins, Salisbury; J. A. Bell, Hastings; J. Borland, F.C.S., F.R.M.S., Kilmarnock; J. E. Brunner, M.A., Dublin; W. Hills, F.C.S., London; D. B. Dott, F.R.S.F., Edinburgh; W. A. H. Naylor, F.C.S., Loudon; J. Sim, Aberdeen; W. H. Symons, F.C.S., F.R.M.S., London.

Local Secretary.—A. Strachan, Aberdeen.

Auditors.—A. I. Joseph, Hastings; J. Paterson, Aberdeen.

Mr. ATKINS then proposed a vote of thanks to the Local Committee of Hastings for having successfully carried out the arrangements for the visit of the Conference, specially mentioning Messrs. Bell, Rossiter, Keyworth, and Joseph. That meeting would do something to solve the still open question as to whether they could have a successful meeting apart from the British Association.

Mr. WELLS (Dublin) seconded the motion, which was carried enthusiastically.

Messrs. BELL and ROSSITER responded.

Mr. KINNINMONT next proposed "That the hearty thanks of the Conference be given to the President for the able and courteous manner in which he had conducted the business of the meetings." Their President's ability was undoubted, and no one could surpass him for courtesy.

Mr. TYREE could endorse what was said by Mr. Kinninmont, and he might add that the President had cultivated the art of speaking the absolute truth in the pleasantest possible way. He had delivered them such a Presidential Address as would long be cherished in their memories.

Messrs. FRASER and ATKINS also expressed themselves in warm terms.

Mr. SCHACHT, as one of the Vice-Presidents, put the vote to the Conference, and it was carried with the utmost enthusiasm.

The PRESIDENT, who was much affected by the warm encomiums passed upon him, briefly responded, and the Conference broke up.

MEMBERS PRESENT.

Atkins, S. R., Salisbury	Maitland, Pelham C., London
Baldock, J. H., South Norwood	Martindale, Wm., London
Baxter, George, Chester	Meadows, N., Gloucester
Barnes, J. B., London	Mitten, Flora, Hurstpierpoint
Beck, Albert N., Hastings	Naylor, A. H., London
Bell, Jas. J., Hastings	New, F. C., St. Leonards
Berland, John, Kilmarnock	Passmore, F., London
Benger, F. Baden, Manchester	Piper, W. G., London
Bindloss, Geo. F., London	Plowman, Sydney, London
Bolton, Felix P., Hastings	Prince, Philip, London
Bottle, Alex., Dover	Radley, W. V., Southampton
Braby, F., Teddington	Redwood, T., London
Bremridge, Richd., London	Richcs, Frank, Torquay
Clark, S. W., Leicester	Riches, Thos., Torquay
Cooke, Philip, Wandsworth	Rossiter, F., Hastings
Crabsawb, E., London	Savage, W. D., Brighton
Dott, D. B., Edinburgh	Savage, W. W., Brighton
Dunkley, Edward, Tiverton Wells	Schacht, G. F., Clifton
Elborne, Wm., Manchester	Siobold, L., Manchester
Farnworth, Wm., Blackburn	Silliton, Fred. S., Redhill
Forbes, W., Bolton	Slade, John, Tenbury
Frazer, Daniel, Glasgow	Smith, A. W., Rye
Gerrard, A. W., London	Squire, Frank R., San Remo
Glazier, Walter H., London	Stafford, Wm., Gloucester
Glover, John S., Oldham	Taylor, G. S., London
Greenisb, Thos., London	Thirk, Snowden, London
Haraday, F. J., Doncaster	Thomas, Horace, St. Leonards
Hasselby, E. H., St. Leonards	Thorpe, G. A., Mayor of Hastings
Holmes, E. M., London	Tyler, Thos., London
Hutchens, Wm., Bonnyrigg	Vint, Thos. D., Hastings
Jefferson, Peter, Leeds	Ward, J., Gloucester
Joseph, Arthur J., St. Leonards	Wells, W. F., jun., Dublin
Kay, James P., Aberdeen	Williams, John, London
Keene, Mr. and Mrs. John, Brinckley	Willmott, W., London
Keyworth, George Alex., F.C.S., Hastings	Winfrey, R., London
Kinninmont, Alex., Glasgow	Wrenn, W. A., London
Lennon, G. F., Hastings	Wootton, A. C., London
Lewinton, A. B., London	Wright, Theodore R., London
Mackenzie, Chas. A., Hastings	Young, R. Fisher, New Barnet, Herts

THE DINNER.

The business of the Conference concluded, the room in which the meetings had been held was at once set out for a dinner. Covers were laid for 80, but only about 60 were present. Mr. Bell was in the chair, with the President of the Conference on his right and the Mayor of Hastings on his left. There was no formal programme, but after dinner Mr. Bell rose and said that as pharmacists were well known to be the most loyal of subjects, the toast of "The Royal Family" might be dispensed with. He would, therefore, with a view of reducing the toast-list as much as possible, at once propose "The British Pharmaceutical Conference." It had been hoped that the British Medical Association would have met at Hastings this year. That anticipation had fallen through, but he was very glad that the Pharmaceutical Conference had honoured their town by holding their meeting there. He was glad to welcome visitors from England, Scotland, Ireland, and even from Italy. The visit of the Conference to Hastings had done them a particular service in giving an impetus to the local association which they had for some time desired to establish. He hoped the pharmacists who should go with

them on the excursion the next day would be so satisfied with what they saw that they would induce their friends to come afterwards to see the same scenery. He had that day received a telegram from Sir T. Brassay, expressing his regret that he would not be able to receive the members of the Conference personally at Normanhurst, as he had hoped to have done.

Mr. Williams said he wished he could sink himself and speak in reply to the toast as more eloquent members would have done. Fortunately the British Pharmaceutical Conference did not depend on him. The Conference was robust, and he believed had a long period of success before it. It was true they had that day to part with valuable officers, but they hoped that the able men who had been appointed in their places would maintain the prosperity of the Conference. It was important to remember that the Conference was distinct from the Pharmaceutical Society, which was the body that had to carry out the political duties of pharmacy, and to which the trade looked for guidance and support. In conclusion, Mr. Williams asked permission to propose the health of the Mayor, Mr. Alderman Thorpe. Pharmacists felt themselves honoured by his presence, and he wished "Prosperity to Hastings and the Health of the Mayor."

The Mayor thought that as they had passed over the Queen, they might have omitted the Mayor. However, he was very pleased to dine with such a distinguished body, and he was glad the pharmacists had chosen Hastings for their twenty-first birthday. The Mayor then gave some details respecting the sanitary condition of Hastings and the work done by the Corporation.

Mr. Atkins proposed the health of the Local Committee, especially naming Messrs. Bell, Rossiter, Joseph, and Keyworth. In eloquent terms Mr. Atkins described the benefits of the Conference, and complimented the gentlemen named on the abundant success of their labours.

Appropriate replies were made by Messrs. Bell and Rossiter. Mr. Keyworth was absent, and Mr. Joseph gave a song instead of a speech. This opened the stream of harmony, which flowed on uninterruptedly till past midnight.

THE EXCURSION.

Thursday, August 14.

As a wind-up to the proceedings, the local committee had organised for this day a trip through some of the loveliest scenery which the neighbourhood could offer. At 10.30 A.M. a party numbering nearly 100, and including a fair sprinkling of ladies, started from the Castle Hotel in open carriages, making first for Battle Abbey. The drive afforded many charming views of woodland and coast scenery. The Duke of Cleveland, the owner of the estate on which the old abbey stands, received his guests personally, and was introduced to the President and several of the officers of the Conference. He said he took great interest in the subjects of their discussions, and would have found much pleasure in attending some of their sessions. The duke's kind and courteous manner seemed to be much appreciated. After a short historical lecture by — Cole, Esq., M.A., of Hastings, the party proceeded to Ashburnham Park by a drive of exquisite beauty. This park, it appears, is rather jealously secluded by its owner, the Earl of Ashburnham, and this part of the journey was new to many of the residents themselves. The fine collection of MSS. and other objects of historical interest were shown and explained by the Vicar of Ashburnham, the Rev. — Whistler. Normanhurst, the seat of Sir Thomas Brassey, came next in order, and here the party stayed for some hours. A substantial luncheon was provided, complimentary speeches were made, the mansion, crowded with curiosities, and the park were examined, and in due course a pleasant return drive brought the company back to Hastings in time to allow those who wished to do so to return to London or elsewhere at a reasonable hour.



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HAY'S SOLUBLE ESSENCE OF GINGER. See page 76

HAY'S GINGER CHAMPAGNE. See page 74.

HAY'S SOLUBLE ESSENCE OF LEMON. See page 74.

EDITORIAL NOTES.

THE BRITISH PHARMACEUTICAL CONFERENCE.

THERE was a special interest attaching to the meeting of the British Pharmaceutical Conference just concluded at Hastings, partly for the reason that it was the first time the Conference had attempted to run alone out of London, and partly because for the first time no bribes of free luncheons and free picnics were offered to induce attendance. Two or three chemists at Hastings had devoted a great deal of time to prepare the way for this Conference, and, of course, some sacrifice of money, as well as of time, had to be incurred. But, broadly, the principle acted on was that each visitor to the Conference had to pay a fair price for whatever enjoyment he took advantage of. Luncheons were charged 2s. 6d. each, the dinner tickets were 7s. 6d., and 7s. 6d. was the price of the day's trip on Thursday. It did seem that these causes had some influence in reducing the attendance at Hastings. The total number of visitors was less than on many previous occasions, but it must be added that the number of listeners and discussionists during the sessions was at least equal to the average, notwithstanding the attractions of the neighbouring

ocean. Further, too, we may observe that, though this Conference was abandoned by certain of its earlier supporters, there was no lack at all of willingness or ability to thresh out the topics brought forward. It will be seen that the sum total of the information conveyed through this Conference was considerable, though it may be doubted whether the most valuable contributions were in all cases those which received the principal attention.

The President for the year, Mr. John Williams, is one whom all sections of the trade have great pleasure in honouring. He has done distinguished service to the Pharmaceutical Society, both as its President and in other capacities, and on the Council he has always taken a broad view of his position. During the whole history of the Pharmaceutical Conference he has been one of its pillars; his long special experience in practical pharmaceutical chemistry has enabled him to assist largely in the discussions and, by the contribution of papers, towards the establishment and maintenance of the scientific and useful character of the Association.

It was anticipated that Mr. Williams would give his audience the benefit of his special chemical knowledge, and it soon appeared that a scientific review was to be the staple of his address. After a few preliminary remarks, he proceeded to narrate concisely a number of the more interesting facts of recent science which have a bearing on pharmacy. As usual in such a review, prophecy will insist on entering. As a minor result of modern investigation, Mr. Williams foresees the day when carbonic acid will be served at the dinner-table, "each guest chipping off a portion," and thus being enabled to cool his wine and aerate it at the same time. Working on, *vid* Pasteur and Koch, the President touched on recent foreign Pharmacopceias, and this led him to reiterate the popular demand for a place for pharmacists on the Pharmacopœia Committee. The address concluded with a reference to the possible but still remote International Pharmacopœia, the speaker urging that not too much should be attempted, but that the Committee should be satisfied with a general agreement as to the strength-standards of opium preparations, hydrocyanic acid, and other dangerous medicines in universal use.

Among the reports of work done at the expense of the Conference was one by Mr. Elborne on English rhubarb, which revealed some interesting facts, such as that 8,000 lbs. of that product came into the market annually. Mr. Elborne gave details of the chief physical and chemical distinguishing characteristics of English and foreign rhubarb, but his papers, quite properly in a Pharmaceutical Conference, stopped short of the most interesting point, namely the relative therapeutic values of the different drugs.

Mr. Gerrard has completed his exhaustive examination of the cultivation and alkaloidal value of the various parts of belladonna. He finds the leaves contain the most alkaloid, the second to the fourth year of growth, and the time of flowering, the best for collecting. In regard to henbane, Mr. Gerrard, who has lately commenced to grow it, declares that the description of the distinguishing characteristics of annual and biennial henbane which lately appeared in this journal from the pen of Mr. Gilmour are not reliable. Mr. Gilmour's observations, we may remark, are endorsed by Mr. Usher, who has grown henbane all his life, while Mr. Gerrard has had the advantage of two years' experience. Mr. Hasselby interested the meeting by narrating his experience in growing belladonna and henbane in his back garden. He did not add his profit and loss account.

Messrs. Dunstan and Short sent a summary of their investigations into the chemistry, botany, and pharmacy of *nux vomica*, and Messrs. Dunstan and Ransom reported their work in estimating the alkaloids of belladonna.

Mr. Siebold criticised with high chemical skill the various methods of volumetric estimation of hydrocyanic acid, and proved the value of the double cyanide of sodium and silver in general analysis.

Mr. Greenish returned to the subject of crushed linseed, and urged that that especial form of the article should be the only recognised one in the forthcoming Pharmacopœia. This paper induced a lively discussion, most of the speakers seeming to agree with the author. Professor Redwood's speech was diplomatically vague.

Mr. Schacht argued against the standardisation of pharmaceutical preparations with an earnestness which he vainly endeavoured to impart to his hearers, not one of whom probably had any intention of committing the iniquity which he so warmly deprecated.

Mr. Dott urged that the more general use of the alkaloids themselves in medicine would render standardisation unnecessary. In his paper he also criticised the new process for laudanum advocated by the Messrs. Smith, which we have published. The result of their process, he says, would be, not laudanum, but an impure solution of morphia salts.

Mr. Keyworth, of Hastings, entered into the geological field, exhibiting and describing a fossil aloe which is found beneath the cliffs of the neighbourhood.

Mr. Naylor further elucidates the chemistry of the alkaloid he has obtained from the *Hymenodictyon excelsum*, a favourite tonic and febrifuge among the Hindoos.

Mr. Wilmott repeated his opinion that the filtration of lard through paper was not only not beneficial, as other pharmacists have asserted, but that it is actually detrimental, in consequence of the necessity of liquefying the fat at a high temperature before it can be passed through the paper.

Mr. Martindale, in a paper on seidlitz powders, showed that the use of an excess of acid was likely to cause a deposition of cream of tartar, which customers might and did regard as "scum." He gave 36 grains of acid as the proper proportion. The discussion on this tempting subject brought out the curious fact that in Scotland the almost universal preference is for "double" seidlitz powders, that is, powders containing 4 drachms of Rochelle salt instead of 2 drachms.

Dr. Thresh furnished reports on the pungent principles of grains of paradise, ginger, pepper, and galangal, and also gave an analysis of the rhizome of the last named.

A bulky sample of *Mylietta Australis*, or native bread, weighing 37 lbs., was sent from Tasmania by Mr. Miller, of Hobart, and was examined with much interest. A paper describing it, by Mr. W. Southall, explained that it was the mycelium of a fungus.

Mr. Williams described the preparation of some perfectly anhydrous essential oils, and he believes that in that state they are not liable to oxidation, and are of much finer odour. This would be an important result to attain.

In a useful paper on tincture of quinine, Mr. Wright gave further reasons for advocating the employment of hydrochlorate instead of sulphate of quinine to make the tincture, as has before been suggested by Mr. Whitfield and Mr. Martindale.

The perennial topic of bark brought forward two papers. One was by Mr. Hodgkin on China bicolorata or Tecamez bark, which closely resembles cuprea bark, and, after tracing the history of this product, Mr. Hodgkin gives his reasons for regarding it as a Remijia. The other paper was by Mr. David Hooper, who advocated the claim of *Cinchona pubescens* to a place in the Pharmacopœia.

Mr. Maben has continued his experiments on Sesame Oil as a basis for lead plaster, and reiterated his opinion in favour of it. According to Mr. Gerrard, lead plaster is turned out

white by the addition of water, which is emulsified. But this was contradicted by the manufacturers present, who, however, carefully avoided troubling the meeting with too many details.

Messrs. Mahen and Dechan have found that in twelve specimens of grey powder the proportion of metal varied from under 30 to over 50 per cent. Partly, they think, this is accounted for by the fact that the mercury has a tendency to fall to the bottom of the shop-hottle. They also find the proportion of oxide vary considerably. They found the proportion of mercury in blue pills vary from 28 to 41 per cent. in eight samples. They only found oxide in very dry specimens. But in some of the samples they found confection of hips had been used instead of confection of roses. In mercurial ointment they found but little trace of oxidation, but they did find much variation of strength, and their general conclusions were not complimentary to pharmaceutical morality. This paper also called forth a discussion between the retailers and the manufacturers.

Mr. Stanford drove another nail into the coffin of the theory of iodine as the curative agent in cod-liver oil. Mr. T. S. Dymond described four processes for the manufacture of sulphurated lime, and gave reasons for preferring one of these; but according to Mr. Tyre this conclusion has been previously arrived at by manufacturers. Mr. Dymond also contributed a paper on the estimation of the relative values of extracts of malt. The last two papers came from Edinburgh, and were read in brief abstract, but seemed to be of especial value. Mr. MacEwan gave a careful review of the tests for ascertaining the purity of commercial Peruvian halsam, and Mr. Hill reported the existence of copper in many other parts of the pharmacy than the till. It seems liable to get into all preparations which have been prepared in copper pans. The author recommends block-tin vessels for such operations, or, if not, copper vessels lined with tin, as has been suggested by Mr. Corder, or enamelled iron pans, as recommended by Mr. Schacht.

Aberdeen was chosen for the next meeting, and Mr. Stephenson, of Edinburgh, was appointed president.

The dinner on Wednesday evening did not involve any great intellectual strain, but the excursion on Thursday to Battle Abbey, Ashburnham, and Normanhurst seems to have afforded abundant gratification to all who participated in it.

THE GOVERNMENT AND PATENT MEDICINES.

THERE is evidently a conspiracy, or, in more polite language, an organisation, afloat, the object of which is to put down patent medicines. Articles have appeared in all the medical journals, the British Medical Association have passed resolutions, questions have been asked in Parliament, and letters and articles have been published in the *Times* and other papers, repeating, one after another, arguments of such muddled character that it is impossible to assume an independent origin for them. We have no desire to defend patent-medicine proprietors generally. Their interests and the interests of chemists and druggists are by no means coincident. At the same time, the subject is one on which we cannot help having an opinion, and, perhaps, have as good means of forming an opinion as the authorities who talk in Parliament or write to the *Times*.

First of all we note with satisfaction that the basis of this present agitation is an outcome of the action of the Board of Inland Revenue in insisting on the stamping of certain "foreign medicines." This course was first protested against in this journal, and writers in the *Times*, *Lancet*, *British*

Medical Journal, and other papers have since taken it up. The practical effect of the decision of the Board of Inland Revenue in the case of Parke, Davis & Co.'s medicines is to put a 10-per-cent. protective duty on foreign pharmaceutical preparations. We want to see our home druggists hold their own against the world, and we believe they can do so, but we have no wish to see them protected by legislation under any suhertfuge whatever. We are informed that the Board refuse to modify their decision in any degree as concerns Parke, Davis & Co.'s preparations. Their policy is reasonable and proper. They are entrusted with the carrying out of the provisions of the Act, and it is not for them to judge of its wisdom. Our only complaint of the Board is that they do not enforce this particular provision thoroughly; if they would do so it would be the sooner repealed.

But, starting on this very good foundation, our medical friends proceed to argue against patent medicines in general. The two subjects have nothing in common. Patent medicines may or may not carry the mark of the Beast, but the fact that the Board of Inland Revenue has included certain American preparations among patent medicines does not prove their iniquity.

Then these scribes, with surprising unanimity, trot out a curious calculation about patent-medicine proprietors making a large extra profit because of the stamp. "They reckon the tax as a part of the initial cost of production, and so in all their subsequent calculations as to profits they succeed in mulcting alike the middleman and the actual consumer." The truth is that they get as much profit as they can, and they would do the same if they had no stamp to reckon with. That argument is simply silly. But the reformers think that, if they could get the stamp abolished, they would somehow or other stop the trade in the articles themselves. So they use all the arguments they can find. Their strongest position is that the public believe the stamp in some way guarantees the medicine, and this is a notion which, admittedly, the proprietors have themselves encouraged.

No intelligent person can suppose that the sale of over nineteen millions of packets of patent medicines yearly in Great Britain is much influenced by such a ridiculous delusion as is supposed. At the same time, it would be in every respect desirable that some words should be printed on the stamp intimating that no official guarantee was implied thereby. The Chancellor of the Exchequer, when interrogated recently on the point, expressed his concurrence with that view, but he rather emphatically declined to throw away 160,000*l.* in consequence of the arguments which have yet been brought forward. He is quite right; and, if the doctors have so much faith in the virtues of the Government stamp, let them petition to be put on something like an equal footing by a law which should require them to write their prescriptions on stamped paper of proportionate value.

THE SESSION OF 1884.

THE Parliamentary session just closing is remarkable above all other characteristics for its peculiar barrenness. Without criticising either men or parties, it has become a duty for serious men of all sections to consider well the causes which are reducing our legislative machinery to impotence. The business thrown upon the Legislature has of late years enormously increased, and there is a tendency among all classes to centralise more and more the management of big affairs in the hands of the Government. The result is necessarily a ramification of laws and a multitude of controlling powers and checks on these, which involve such watchfulness and friction in the House of Commons as was never dreamed of until recently. Along with this the House has come to be

regarded more than ever as a club; the absolutely essential business of Parliament is shuffled through at odd hours when the majority of the members have been tired out, and all the hours when members are fresh in mind and body are devoted to party fights and academic discussions, of great collateral importance, but not promotive of national as distinguished from sectional politics.

The tale of work actually accomplished in the session is curiously meagre. The only measures which have been passed have been of local interest only, or have been supplementary to previous legislation, or have been official provisions. There does not seem to have been a single measure which has the slightest chance of settling into history as the Act of 1884, unless it be the tentative effort to reduce the interest on the National Debt. For ourselves, we have to be content to record simply two failures. We regret particularly the loss of the Medical Acts Amendment Bill, because if it had passed it would have swept away for ever all power of harassing chemists for so-called "acting as apothecaries." The Royal Commission which considered this question, and the Legislature generally, are quite agreed that, while titles should be scrupulously protected, no monopoly in medicine shall be given to anybody. This medical Bill is a melancholy instance of the manner in which most costly labour is wasted session after session.

Patent medicines have secured a considerable share of attention during the session. The Privy Council have certainly had this subject and the relative one of the trade in poisons before them, and it is stated they have prepared a Bill on the subjects. They have been too diplomatic, however, to publish their Bill towards the end of the session, and thus give those concerned the best part of a year to pick holes in it. We could have wished that such a Bill might have been framed with the co-operation of the elected representatives of pharmacy, and the Privy Council offered the opportunity. That opportunity was, as we think, thrown away by the unwise persistence of the Pharmaceutical Council in adding to their suggestions about poisons the deadweight of their entirely irrelevant fancies about the curriculum, which they knew were directly opposed by the Privy Council's official representative.

THE SOMERSET-HOUSE LABORATORY AND ITS WORK.

THE Principal of the Laboratory at Somerset House (Dr. Bell), in his annual report, states that during the year ending March 31, 1884, the number of samples examined in the laboratory was 26,550, being 349 more than the highest number ever examined in one year.

Fifty-one samples were referred to this laboratory under the Sale of Food and Drugs Act, as against 30 samples last year. They comprised milk, butter, bread, coffee, mustard, ginger, oatmeal, rum, whisky, tincture of quinine, and carbonate of magnesia.

In 34 cases the official analysts confirmed, and in 17 disagreed with, the conclusions of the public analysts. Of these 33 had reference to milk, and in 8 instances the Inland Revenue chemists disagreed with the original reports.

In three cases out of seven, in which the microscope was the principal means of detecting adulteration, the Somerset House chemists were unable to confirm the public analyst. They comprised 1 sample of coffee, alleged to be adulterated with chicory, and 2 of mustard, each of which was said to contain 12 per cent. of wheat flour.

In the case of "magnesia," the public analyst found that it consisted of about two-thirds carbonate and one-third oxide of magnesia. These results, Dr. Bell says, were prac-

tically confirmed by us. The analyst held, however, that this sample ought not to have been sold for light magnesia, as its effects as a medicine were different. In giving our certificate, we considered it proper to call the attention of the justices to the synonyms of carbonate of magnesia and magnesia, and the similarity of the physiological effects ascribed to them by various accepted authorities.

Of tincture of quinine, the public analyst reported that it contained only 6·2 grains of sulphate of quinine per oz. Defendant's analyst stated that it contained 7·44 grains, and that about $\frac{1}{2}$ grain was lost in the analysis. The full amount according to the formula—8 grains per oz.—was found by us.

Four samples of spirits had all reference to excessive dilution with water, and, with one exception, the results of the public analysts were confirmed.

A sample of butter, said to consist mostly of foreign fat, was found to be genuine, and a sample of bread, alleged to contain alum, was found to be free from that substance.

The bulk of the chemical work at Somerset House is done for the Customs and Inland Revenue, including last year 6,640 samples of beer wort, 105 of tobacco, 929 of "compounds," liqueurs, and wines, 527 spirits, a number of essences, teetotal beverages, sweet spirits of nitre, peptonised beef and malt wine, Khoosh bitters, menthol cones, chlorodyne, cough balsam, and other miscellaneous articles. For the Admiralty 113 samples were analysed, ranging from butter to German silver. Special attention was directed to the enamel linings of cooking-utensils, which in many cases were found to contain dangerous quantities of lead and arsenic. For the Board of Trade 740 samples of lemon and lime juice were analysed. Of these, 13 per cent. of the lemon and 6 per cent. of the lime juice samples had to be rejected, and the improvement noted last year had not been maintained. For the India Office 684 general samples and 440 beers were analysed, and for the Stationery Office 14 samples of sealing-wax and ink were examined. The sealing-wax was in every case inferior to the contract sample. The ink was found to have been prepared from proper materials, but not in accordance with the contract sample.

The Customs and Inland Revenue have undertaken 39 prosecutions on the analytical reports, and obtained convictions in every case. The annual inspection of the tobacco manufactories of the United Kingdom by the analysts of the department resulted in the detection of one manufacturer in Ireland using gum, and another using magnesia salts. On the whole, it would not appear from this report that commercial morality is of flourishing growth.

THE NASCENT HYDROGEN THEORY.

ANOTHER of our respected and venerable chemical theories is doomed to disappear, or at least to take its place merely as a historical relic. We were all taught and had experience of the peculiar powers and properties of certain gases "in the nascent condition." The theory that an element possessed remarkable properties at the moment of its disassociation, which is lost an instant or so later, is intrinsically absurd, but it has been held and taught in a vague but trustful manner up to the present day, and we are not aware that it has ever been questioned until the Italian chemist, Dr. Tommasi, resolved to get at the exact truth. He has communicated the result of his experiments, which have been very many, to the Academy of Sciences of Milan. These experiments relate particularly to the action of nascent hydrogen. Tommasi finds that the powers of nascent hydrogen depend always on certain thermic conditions. The hydrogen developed, for instance, by sodium amalgam in an acidulated solution of chloride of silver in the dark does not

reduce the chloride; but the hydrogen developed by the electric current does have that effect. Chlorate of potash in saturated and acidulated solution is reduced by zinc, but not by sodium amalgam. And yet both develop nascent hydrogen. How are these and similar facts to be explained? Simply, according to Dr. Tommasi, by the sufficient or insufficient amount of heat, caloric, energy which accompanies the development of the hydrogen. It is quite unnecessary to assume any allotropic condition of the gas; it is the heat, and not any peculiar condition of the nascent gas, which determines the decomposition when such takes place. As a proof, says the investigator, that nascent hydrogen is synonymous with H + Cal., take the action of hydrogen on sulphur. Ordinary hydrogen and sulphur do not combine, but chemical combination results if sulphur and nascent hydrogen are brought into contact. But then ordinary hydrogen, brought into contact with melted sulphur, also combines. Is it not evident that the same agent, namely, heat, is in each case the factor determining the combination?

THE WHOLESALE DRUG TRADE SIXTY YEARS AGO.

JUST too late to insert in our article last month, we received a note from Mr. Joseph Sidney Lescher, giving a few reminiscences of the drug trade in his young days, which, however, we do not care to let go. Mr. Lescher writes:—

"About the year 1820 wholesale druggists in London sold many things besides drugs. Jenks, Wheeler & Baildon, with whom I served my apprenticeship, dealt extensively in hops, tea, spices, seeds, drysalteries, their travellers calling on retailers of many different trades. At that time, with postage to Bristol 8*d.*, to Durham 10*d.*, to Edinburgh 1*s.* 2*d.*, we had no price-lists, and later on only lists with prices filled in by hand. Orders from chemists would consist principally of senna, Peruvian barks, Epsom salts, and such crude drugs and chemicals, with tinctures; but cod-liver oil, glycerine, morphia, iodide of potash, concentrated infusions and decoctions, and quinine were unknown in order-sheets. It must have been about 1825 that, being then with Mackmurdo & Pitchford, chemical manufacturers, Stratford, I called for an account at the wholesale drug-house of Davy & Co., and for the first time heard quinine talked about. Old Mr. Davy was saying that the new essential principle of Peruvian bark had been occasionally used with success by medical men, and here and there asked for by chemists, and might, perhaps, come into use some day to replace bark. Citric acid was then about 8*s.* 6*d.* per lb., and oxalic 4*s.* 6*d.* per lb. Castor oil was imported in duppas or skins, made into shapes when wet, capable of holding from 40 to 50 lbs. of oil. Ginger was then never sold bleached, this being one of the modern perfections. No half or whole holidays then; indeed, Saturday was generally a busy afternoon on 'Change.

"I well remember the origin of the Pharmaceutical Society. There was a meeting of a committee of the retail and wholesale trade at the Crown and Anchor Tavern, Strand (not now existing), to form a society of the trade to defeat Hawes' Bill, which attacked the chemists' interests. Mr. Jacob Bell, the first President, and Mr. Pigeon, wholesale druggist, first Treasurer of the Pharmaceutical Society, threw their powerful influence into the scale; Hawes' Bill was defeated; the Pharmaceutical Society formed, on the Council of which I, with other members of the wholesale trade, sat for many years.

"Although there was no Adulteration Act and no Pharmacy Act in those days, yet the then heads of the great drug-houses of London (often the same names as we see now) were as careful as to purity and as scrupulous as to quality as at the present day. And similarly in the retail trade. Things were rougher and pharmacy not so elegant, but chemists were as honest and reliable as in 1884, and the pharmacist who was the best man acquired the soonest the confidence of his neighbours, and was generally found to be the man to come to the foremost rank of his profession."

Scientific Notes:

On Chemistry, Pharmacy, Botany, Materia Medica, &c., Original, Selected, and Translated.

NITRATE OF POTASH.

M. BERTHELOT (*Journ. de Pharm. et de Chim.*) is investigating by a Government grant the transformations of nitrogen in plants. During the past year he has made some thousands of experiments, and he finds on these the belief that nitrate of potash or other nitrates is formed in all plants at some period of their development. Certain cells seem to produce this formation, which is correlative with the phenomena of oxidation and reduction which occur in the tissues. The nitrate is invariably found in largest proportion in the stems of plants.

A METHOD OF PURIFYING MERCURY.*

IN experimenting on the difference in conductivity of pure mercury and of mercury contaminated with other metals, C. Michaelis finds that of all methods given for cleaning mercury the best consists in distilling it in vacuo, the surface of the metal being kept perfectly smooth. Even traces of air cause a spitting. The author recommends the use of a mercury-pump for producing the vacuum.

MANNITOSE AND LEVULOSE.†

DAFERT finds that the so-called mannitose prepared by oxidising mannite gives all the reactions of levulose, and suggests the cancellation of the name mannitose and substitution of the name levulose for that substance.

BONE-BLEACHING WITH PHOSPHOROUS ACID.‡

FROM experiments carried out in the laboratory of the Bavarian Industrial Museum, it appears that phosphorous acid is an excellent bleacher for bone and articles made of that material. The articles to be bleached are first of all deprived of their fat by means of benzine or ether, dried, then soaked for some time in a 1-per-cent. solution of phosphorous acid, washed, and dried. This treatment thoroughly bleaches them and gives them an appearance of ivory. (See THE CHEMIST AND DRUGGIST, 1883, page 564.)

GUANO A POISON.

HAGER, in his *Pharmaceutische Centralhalle*, records a case in Carlsburg where five cows belonging to a farmer there all died after drinking from a small pond in which some peasants had washed guano-sacks. The same authority further states that he remembers a case some years ago where workmen who had breakfasted in a room where a good deal of guano-dust was flying about got violent pains in the bowels, attended with diarrhoea a few hours after.

* *Chemiker Zeitung*, July 13, 1884.

† *Zeitschrift für Zucker Industrie*; through the *Chemiker Zeitung*, July 20, 1884.

‡ *Polytechnisches Notizblatt*; through the *Chemiker Zeitung*, July 20, 1884.

COLCHICINE.

VARIOUS chemists from Pelletier downwards have endeavoured to obtain the active principle of the colchicum, but until now no definite crystalline body has been obtained. The colchicine known at present is an amorphous body obtained in a powdery or syrupy condition. Geyer and Hesse obtained a crystallised body from colchicum by means of acidulated alcohol, and M. Oberlin obtained from the amorphous colchicine a crystal which he termed "colchicinc." But M. Houdé (*Journ. de Pharm. et de Chim.*) considers these are not the true active principle, which he believes he has isolated. He exhausts 35 kilos. of colchicum seeds by 100 kilos. of alcohol 96°. The alcohol is distilled off, and the remaining extract is agitated with its own weight of a 20-per-cent. solution of tartaric acid, which draws the colchicine from fatty and resinous matters. The colchicine is removed from this acid solution by chloroform, by which it is deposited on evaporation. It is purified by various re-solutions. One kilo. of the seeds yields 3 grammes of the crystals. The corms did not yield more than 40 centigrammes of crystals from 1,000 grammes. Dr. Laborde has experimented with this colchicine, and he finds that rather considerable doses are necessary to produce physiological effects. For guinea-pigs weighing 450 grammes 6 centigrammes were fatal, and 2 to 3 centigrammes a physiological dose.

M. Zeisel regards M. Houdé's colchicine as a combination of colchicine with chloroform.

ZINC SULPHIDE BACILLI FOR PREPARING SULPHURETTED HYDROGEN.

SINCE it has been sufficiently proved that sulphuretted hydrogen prepared from iron sulphide and sulphuric acid, even when passed through hydrochloric acid, constantly contains traces of arsenic, H. Hager, in the *Pharmaceutische Centralhalle*, May 1, 1884, recommends the employment of zinc sulphide in the place of the corresponding iron compound. The author finds bacilli of zinc sulphide to be the best form for the purpose, and prepares them as follows:—100 parts of pure zinc oxide are mixed with 45 parts of precipitated sulphur, and small portions of the mixture stirred up in a solution consisting of 15 parts of caustic soda dissolved in 150 parts of distilled water. The whole is then gently boiled for about half an hour, and finally diluted with a large quantity of water. The zinc sulphide formed is collected in a linen strainer, washed with water, and when it has sufficiently strained, and is of a pasty consistency, it is mixed with one-tenth of its volume of white bale and formed into bacilli about 3·5 em. long and 0·5 thick.

The preparation of zinc sulphide in the dry way should be avoided, since violent explosions are very apt to occur.

SEPARATION OF WOOL FROM COTTON IN THE MANUFACTURE OF PAPER.*

ACCORDING to Heddebault, in textures which consist essentially of wool and vegetable fibres, the former may be easily separated from the latter by the application of superheated steam at a pressure of five atmospheres, whereby the wool melts and falls to the bottom of the vessel, while cotton and other vegetable fibres remain floating above.

The melted wool is evaporated to dryness, and is called azotine. Azotine is soluble in water, and is a most valuable manure, representing a value of about 1s. per lb. The superior quality of the rags thus treated, and the utilisation of the by-product azotine, entirely cover the costs of the process.

DETECTION OF LIGNEOUS TISSUE IN PAPER.†

ACCORDING to the *Papier Zeitung*, ligneous tissue may be detected in paper by moistening a piece of the paper with a drop of an alcoholic solution of phloroglucine, and then with a drop of pure hydrochloric acid, when, if ligneous tissue is present, a red coloration ensues.

PATENT MEDICINES.

LAST year we asked the Board of Inland Revenue to favour us with statistics respecting the number of patent medicine stamps sold and patent medicine vendors licensed. These were obligingly furnished to us and were published by us in November of last year. The table is now printed in the Inland Revenue Report, and as it adds the last completed year we reproduce it.

We may again point out, what has been said before at various times, that the stamp is only required on patent medicines sold in Great Britain. This, of course, includes large quantities sold in Great Britain for export. A patent medicine maker may legally consign at his own risk to a *bond-file* agent abroad or in Ireland unstamped medicines. But if he fill an order or make any sale in Great Britain, whether for home consumption or for export, his goods must be duly stamped.

The gradually increasing number of licensed vendors must be taken as proof of the spread of the patent-medicine trade into other channels than that of pharmacy, because as a matter of fact the number of chemists and druggists on the register has not much increased since 1868, when they were first distinctly counted.

Lastly, we may remark, that the addition of a cypher to the total of duty charged for labels would show somewhat roughly the gross retail value of the stamped patent medicines sold annually.

Patent Medicines.

Year Ended March 31	Great Britain			
	Patent Medicine Vendors		Patent Medicine Labels	
	Number of Licences Issued	Amount of Duty Charged	Number of Labels Issued	Amount of Duty Charged
In London and Edinburgh	No.	£.	No.	£.
Other cities, boroughs, or towns	1865 ..	10,922	6,125	7,074,668
corporate in Great Britain	1866 ..	11,520	6,386	7,569,033
Elsewhere in Great Britain	1867 ..	11,792	6,570	8,007,945
	1868 ..	11,963	6,650	8,074,273
	1869 ..	12,271	6,842	8,663,685
	1870 ..	12,339	6,879	9,543,140
	1871 ..	12,619	7,018	9,426,272
	1872 ..	12,854	7,139	11,578,455
Rates of Licence Duty	1873 ..	13,185	7,284	12,731,753
5s.	1874 ..	13,380	7,379	13,085,835
	1875 ..	13,783	7,553	14,824,173
In London and Edinburgh	1876 ..	15,022	3,798	15,873,934
Other cities, boroughs, or towns	1877 ..	15,823	3,956	15,181,730
corporate in Great Britain	1878 ..	16,703	4,176	15,702,051
Elsewhere in Great Britain	1879 ..	19,008	4,752	16,727,669
	1880 ..	19,116	4,779	16,627,131
	1881 ..	18,754	4,688	17,198,442
	1882 ..	18,765	4,691	17,479,678
	1883 ..	19,404	4,851	18,457,990
Great Britain	1884 ..	19,921	4,980	19,006,328
				159,238

* *Reportarium der Analytischen Chemie*; through the *Pharmaceutische Centralhalle*, June 5, 1884.

† *Leitmeritzer Rundschau*, July 3, 1884.

THE GOVERNMENT AND PATENT MEDICINES.

HOUSE OF COMMONS.

THURSDAY, August 7.

MR. T. P. O'CONNOR: I beg to ask Mr. Chancellor of the Exchequer if his attention has been called to the letter signed "Non-practitioner," in the *Times*, and to the articles in the *Lancet*, *Medical Times*, and other medical journals in reference to the Medicine Stamp Act.

If he has any information to confirm the statements in these various publications that the Act, instead of discouraging, stimulates largely the sale of quack medicines, mainly through the stamp being interpreted as a Government guarantee of the safety and purity of the medicine, the vendors of many quack medicines implying in their advertisements that the stamp affords a Government guarantee.

Whether he is aware that the large number of deaths that occur annually are attributed to the taking of poisons in the shape of secret medicines.

If he is aware that the Act which was passed for the purpose of protecting the medical profession against quack medicines has been condemned by all the authoritative organs of medical opinion in the three kingdoms.

Whether the Revenue Department intends to enforce the rigid interpretation put on the Patent Medicines Act, and set forth in the circular of Mr. W. H. Cousins of May 17.

Whether this has been found very seriously to prejudice British exporters of medicine in competition with Continental manufacturers of medicines.

Whether already, owing to this action on the part of the department, a large quantity of the trade to the colonies has fallen into the hands of Germany, France, and America.

And whether he will favourably consider the question of repealing the tax.

MR. CHILDERES: I have not read the newspaper statements to which the hon. member refers, and I can therefore express no opinion upon them; but as to the point raised, viz., whether the stamp on patent medicines should express that these medicines are not guaranteed by Government, I believe that such a course might be followed with advantage. I have no information as to the third and fourth paragraphs of the hon. member's question, but I am aware that there has been during the last few months a good deal of controversy on the subject. Mr. Cousins' circular of May 17 does not refer to British medicines, but to foreign medicines, first imported and then exported in bulk by agents of foreign firms. It can, therefore, only affect persons abroad. I know nothing of the matter to which the last paragraph but one of the question refers. As to the last paragraph, I can hold out no hope of repealing a tax that brings in 160,000*l.* a year, but I have asked the Board of Inland Revenue to report on the whole matter.

MR. WARTON: Do the Government next session or next session but one, intend to carry out the promise they made on March 26 to bring in a Bill dealing with patent medicines?

MR. CHILDERES: I took no part in the conversations on that subject, but I think I can give the promise asked for.

MR. T. P. O'CONNOR: In reference to the right hon. gentleman's reply to my question, I would like to ask him if he knows that the discussion that has been taking place cannot be called a controversy, because opinion has been unanimous against this tax. Secondly, in regard to his statement that the circular applies only to medicines imported here and afterwards exported in bulk, I would ask him whether he does not know that medicines considered very valuable by the faculty, coming from abroad, are practically prohibited by this tax. I would also like to ask him whether he has read a very able and instructive letter on the subject which appeared in the *Times* of to-day.

MR. CHILDERES: I am afraid I have not; but I have Mr. Cousins' circular here, and it only refers to foreign medicines.

MR. T. P. O'CONNOR: I don't deny that.

MR. CHILDERES: As to whether the discussion that has taken place has been controversial, no doubt the parties particularly interested are pretty well agreed, but there are others who are not.

COMMON WORDS AS TRADE-MARKS.

IT is well known that until the passing of the Patents Act last year mere words of any kind, fancy or otherwise, were not accepted for registration as trade-marks, except in cases where such words had been used as trade-marks before the passing of the original Trade-marks Act. With this explanation the following correspondence will be read with some interest by those whom it concerns.

[COPY.]

Birmingham Chamber of Commerce, July 4, 1884.

The Comptroller, Patent Office, Trade-marks Branch, Southampton Buildings, London, W.C.

SIR,—In the *Trade-marks Journal*, No. 327, of July 2, to hand this morning, on page 572, appears the advertisement of two trade-marks for goods in class 42, neither of which seems to me to come within the four corners of Section 64 of the Patents, Designs, and Trade-marks Act, 1883. The particular marks to which I refer are the single and very common words "Domestic" and "Mitre," in plain block type. These proposed marks are not, in the words of the section of the statute above referred to, either—

"a. A name of an individual or firm, printed, impressed, or woven in some particular and distinctive manner."

"b. A written signature or copy of a written signature of the individual or firm applying for registration thereof as a trade-mark," or

"c. A distinctive device, mark, brand, heading, label, ticket, or fancy word or words not in common use."

I shall be obliged if you will kindly let me know if you are now habitually accepting as new marks simple words in common use, such as those to which I am directing your attention, and, if so, how long you have adopted such a course.

I am, sir, your obedient servant,

W. F. HAYDON, Secretary.

[COPY.]

The Patent Office, Trade-marks Branch, July 8, 1884.

SIR,—I beg to acknowledge the receipt of your letter of the 4th instant, inquiring as to the interpretation of Section 64 of the Patents Act, 1883, Subsection 3.

That section has been a matter of long consideration with the Board of Trade, and it was determined, some three months ago, that to take the phrase "fancy words" in the sense that a scholar or literary man would use it would not be a just interpretation, having regard to the subject matter of the Trade-marks sections of the Act. Very ordinary words, it has been found, when associated with particular goods, have acquired a special meaning, and proved indications of property useful to the public and valuable to the manufacturer or retailer. The Board of Trade, therefore, directed the Comptroller that the section should be interpreted in this larger sense, and you will see many such instances in recent numbers of the *Trade-marks Journal*.

In the case you mention, tea may in general language be described as "Domestic," but this epithet is not an ordinary description of it like "Souchong" or "Green," and may, the Comptroller thinks, be associated with a particular business in tea should the proprietor care to make such a claim. "Mitre," however, would be considered a "fancy word" in the strict sense of the term in being altogether out of its ordinary use when associated with tea.

I am, sir, your obedient servant,

J. L. WHITTLE, Registrar.

W. F. Haydon, Esq., Birmingham.

INTERNATIONAL FORESTRY EXHIBITION IN
EDINBURGH.

THE connection between drugs and forestry does not at first sight appear to extend further than shop-fittings; yet, after an hour's run through the above exhibition, one is inclined to think that the forests of the world are striving as hard to fill the drug market as the timber-yard. Those of our readers who are located across the Tweed, and those whom the Continental cholera scare may drive thither for their annual outing, should not fail to visit the Northern metropolis, and spend an afternoon in the grounds of Donaldson's Hospital, where the exhibition is held. That portion of the exhibition which is canopied by Nature's roof is not without interest, though devoted solely to practical forestry; yet the pharmaceutical visitor will have greater interest in the several courts of the temporary building. The first object which attracts the business eye of such a visitor is a section of a Californian giant red-wood tree 13 feet in diameter. Specimens of this wood—"in the rough" and wrought into artistic furniture—are scattered about. These awaken thoughts of a new departure in shop-fittings, for here is a wood which would transport us from our historic sombreness to surroundings of semi-brilliant quietness; a wood possessing the durability of mahogany with a beauty all its own, and so moderate in price as to permit of the use of the solid wood.

Another series of exhibits which cannot fail to interest the pharmacist are those which illustrate the manufacture of wood-pulp paper, and to which Denmark, France, Germany, Norway and Sweden contribute. Wood-paper, it is well known, is not a new thing. The "Heathen Chinee" made it long ago, and in the early years of this century it was tried in this country, without success. It is only, however, within the last twenty years that the manufacture of paper from coniferous woods has become an actual fact. There are several processes followed, the most satisfactory being the acid and soda processes. To the former Mr. Thomas Christy, of Fenchurch Street, has devoted some attention, the sixth part of his "New Commercial Plants and Drugs" being printed on wood-paper, the manufacture of which he treats of in the part. From this we learn that the process "consists in subjecting fibrous plants (or wood) to boiling under pressure in water containing so much sulphurous acid, more or less in combination with an alkali or base to prevent oxidation of the organic matter," the alkali used being magnesia. In the soda process the sliced wood is first boiled in water under pressure, then in strong caustic soda solution, and finally thoroughly washed with water and milled. Specimens illustrative of the stages in the process are shown, and the samples of finished paper clearly evidence the importance and usefulness of the inventions. We observed seidlitz blue and white powder-paper, which the most fastidious pharmacist could not find fault with, and the brown and bright tinted wrapping-papers were quite equal to ordinary esparto paper.

In the north and south courts we come to the region of drugs, the most important exhibits in point of number and variety being those of the Government of India. Drugs, dyes, and tans may be looked upon as the bye-products of the great reserved Indian forests; the main object of the British Government (when about forty years ago they appointed the first conservator of forests) being to ensure the maintenance of the wherewithal for "the wooden walls of England," if this age of steel will yet allow us to use the phrase. These bye-products, we conjecture, form not an inconsiderable item of the immense revenue derived from the forests—a revenue which in 1867-68 amounted to 331,000 $\text{l}.$, and in 1881-82 to 874,000 $\text{l}.$, with a net profit of 317,000 $\text{l}.$. It would be difficult to select from the immense number of specimens a limited number for comment. The specimens come from about twenty circles or departments, from fifty to several hundred different specimens coming from each.

Several of these send the leaves and seed of *Abrus precatorius*, which is receiving so much attention from therapeutists at the present time; the Madras circle exhibiting specimens of *white, brown, and red seed*, in themselves worth seeing. From the Oudh circle comes a parcel of sal bark. "This article is not yet known to the trade, and its manufacture has only just commenced. In the Oudh circle there are some 700 miles of sal forest, and the bark has hitherto been wasted on account of the distance from the market." The bark is obtained from *Vatica robusta*, and is very rich in tannin; an extract prepared after the fashion of catechu, contained (according to the analyst at the forest school of Dehra) double the quantity of tannin that catechu did. Other species of *Vatica* are rich in resin, and several resinous products from them are shown. Essential oils and aromatic fruits are naturally largely represented, but we were surprised to note that the single specimen of *cinchona* bark shown belonged to a private exhibitor. This specimen was produced in Mysore, and was a good specimen of *officinalis*, containing about 4 per cent. of alkaloids. From Ceylon, on the other hand, a full representation of the *cinchona* cultivation in this island has been sent, and is exhibited in a neat case along with the dried flowers and seed. The barks are of seven varieties, natural and renewed; bark-shavings are also shown, together with a case of the tools which are used for peeling and shaving the bark. This is a very neat and interesting exhibit. Essential oils, roots, seeds, and other medicinal products are also exhibited, and on the stand we noticed a very fine nugget of plumbago, such as is not seen every day.

Adjoining this section is a stand devoted to the exhibits of the Maharajah of Jahore. There are few medicinal products shown, but the four specimens of Borneo camphor of different qualities, and the specimen of camphor oil (the products of *Dryobalanops aromatica*) are an exhibit in themselves. The finest specimen is in beautiful crystals, free from tinge of colour, and forms an object which the Orientalist would rapturously live up to. Guttapercha is also well represented in this exhibit, the Maharajah being one of the pioneers of the cultivation of this valuable commodity.

In the Sierra Leone and Gambia exhibit Kola nuts are represented by the entire fruit and the seeds. A very fine specimen of Liberian coffee is also shown, as well as many known, and to us unknown, drugs. We handled a piece of india-rubber extremely like a ball of opium, and crude beeswax as black as night and as filthy as—Father Thames. Alongside was a piece of the purified wax, wonderfully bright in colour and fragrant in odour.

Cape Colony evidently could not avoid sending a few of her native "cure-alls" along with her wonderful selection of timber. A very large piece of *Myrica* wax is exhibited, and a series of specimens of natural waters make a neat array. These waters are chalybeate and sulphurous, and are obtained from thermal springs, which range in temperature from 90° to 142° F. As showing the strength of the chalybeate water there is exhibited a piece of hydrate of iron, weighing about 1 cwt., which had been deposited in one of the springs. St. Vincent shows numerous specimens of bread-fruit, with crisp-looking cakes made therefrom, and luffa gourd in the natural state, in the form of baskets, and as we retail it. Native drugs are fully represented, though not very elegantly exhibited.

Perhaps the most interesting portions of the exhibition are those representing the forest products of British Guiana and Japan. In the courts of the former a magnificent array of gum animi is shown, the pieces ranging from the tiny stalactic piece of the size of the little finger to the largest pieces, 2 feet in length, and about 1 foot in diameter. This resin, it appears, is produced in fair quantity in Guiana, some of it being extremely pure and bringing 200*l.* a ton. Nearly a hundred different varieties of medicinal barks are shown, unfortunately bearing only the native names, and fruits and seeds are so numerous as to form a perfect wilderness of new remedies. We noticed a curious-looking moss thickly beset with *jequirity* seeds. By the way, nearly all exhibitors send these seeds, so that the supply need not fail us if they become a standard article. The Japanese exhibit is a feature of the exhibition; timbers and fibres are the most important portion, but the medicinal products are not without interest. Camphor, Japan wax (two-varieties), and a series of preserved fruits of the orange order

struck us as being a feature, but the medicines number nearly 150 specimens, and are well worth examination. We noticed in another part of the court a toothbrush of remarkable construction, or rather design. A piece of white wood 5 inches long is squared off to a point at one end, the other being rounded, and the last inch teased out so that the fibres represented a brush somewhat larger than the swan-quill brush. This formed a combined toothpick and brush, so cheap that one could afford to have a new one for each operation. In a carefully-covered case are shown the constituents and derivatives of Japanese lacquer-juice (the milky secretion of *Rhus vernicifera*), the Urushi of the Japanese, together with beautiful lacquered articles. Considering the mystery which has until lately surrounded Japanese lacquer-work, this exhibit should not be passed over owing to its small size.

In concluding this hasty run over the exhibition we must not omit to notice the exhibits of chemists and druggists. Mr. R. T. Linton, Edinburgh, has a stand devoted to wood-varnish; Mr. W. Smith and Mr. Welsh show their Insecticides for flies on forest trees and the like; and Mr. Purves exhibits a case of wood sections (microscopic), which reflect great credit on his artistic skill. Coffee is represented by Mr. Thos. Symington's essences, the exhibitor also showing two living coffee plants and specimens of all known varieties of coffee-beans; and Messrs. Lorimer & Co., of London, show cinchona bark, and specialties prepared therefrom.

THE BRITISH MEDICAL ASSOCIATION ON THE PHARMACOPEIA AND THE PATENT MEDICINE STAMP.

THE following resolutions were adopted by the newly-formed section on pharmacology and therapeutics at the recent meeting of the British Medical Association at Belfast, and were referred to the Council:

That, in the opinion of the section of pharmacology and therapeutics of the British Medical Association, the present condition of the British Pharmacopœia is not satisfactory, and that the Council of the Association be requested to consider with as little delay as possible what steps should be taken to ensure that the proposed new edition be brought into more complete accord with the present state of medical knowledge.

That, in the opinion of the section of pharmacology and therapeutics of the British Medical Association, it is highly desirable that the Patent Medicine Stamp Act should be repealed, for the following reasons:—(1) It is unjust to impose a tax on medicines; (2) the Act, as recently interpreted, promises greatly to impede the importation and use, especially in hospital practice, of medicines of foreign origin; and (3) the Government label issued under the Stamp Act is taken advantage of by patent medicine manufacturers to give the appearance of Government endorsement to their productions, and lead the public to suppose that the properties of the medicines are sanctioned by authority.

That the resolution adopted by this section in reference to the Patent Medicine Stamp Act be referred to the Parliamentary Bills Committee, with the request that they take steps to press the matter upon the attention of the Government.

As a result of the discussion on the Pharmacopœia, a committee consisting of the President of the section (Dr. MacLagan) and two Vice-Presidents, Professor Hay (Scotland) and Dr. Whitla (Ireland), with Dr. Murrell (England), was appointed to work with a sub-committee of the Council of the Association, and take immediate steps to have the views of the Association represented in the compilation of our proposed new Pharmacopœia.

We also learn from an editorial summary in the *British Medical Journal* that suggestions were made by the section that the Association should organise some means for establishing a supplemental Pharmacopœia, or semi-official list of remedies, whose actions are not sufficiently tested to give them a place in the Pharmacopœia. This list, added to or changed from year to year by the Association, would make the basis for changes to be considered by the sub-committee of the Medical Council at the periodical revisions of the British Pharmacopœia of the future.

PHARMACY IN CANADA.

(FROM OUR OWN CORRESPONDENT.)

MONTREAL, July 24.

ANNUAL MEETING OF THE PHARMACEUTICAL ASSOCIATION.

THE annual meeting of the Pharmaceutical Association of the province of Quebec took place in the city of Quebec on June 16. One of the large lecture-rooms of Laval University was kindly placed at the disposal of the Association by the Rector. The annual meeting, I may remark, is held alternately in the cities of Montreal and Quebec, these being the two largest cities in the province of Quebec.

Mr. H. F. Jackson, the president, took the chair, and several matters of moment to licentiates were discussed, notably, the question of permitting youths who have only been two years at the business to present themselves for the Minor or assistants' examination. The general opinion appeared to be that three years should be the minimum of time allowed. The financial statement, which was read by Mr. Gray, in the absence of Mr. Kerry, the treasurer, was considered satisfactory, and ordered to be printed, as also was the general statement of the registrar and the annual report of Council. The election of twelve members of Council for the current year then took place, with the following result:—H. R. Gray, Alex. Franson, H. F. Jackson, E. Giroux, H. Sugden Evans, J. D. L. Ambrosse, Paul Mathie, F. C. Saunders, J. A. Harte, S. Luchance, John Kerry, and C. J. Coverton. In the afternoon the examinations, which had commenced the previous day, were continued, with the following result:—Major, for licence: Henri Vernier and Jules Hirtz. Minor, for clerk's certificate: A. E. Giguere, T. Coderre, George Treggett. Preliminary: M. Bouchard and Robert Webb. The officers for the current year will be elected at the first meeting of Council after the annual meeting.

LARGE FAILURE.

A large failure in the wholesale drug business took place last month. Messrs. H. Haswell & Co. assigned in trust to Mr. Stevenson, and a meeting of creditors was held, which resulted in Messrs. David Watson, Saunderson, Logie, Lawrence, and Elliot being appointed a committee to examine the state of affairs and report. The liabilities were in the neighbourhood of \$120,000, and assets about \$76,000. The insolvent at a subsequent meeting offered to compromise by paying 35c. on the dollar, which was not accepted, and the estate was ordered to be sold by auction in lots to suit purchasers, the proceeds to be equally divided amongst the creditors. Mr. Charles Haswell, the junior partner, died at Cannes, in France, a short time since, which appears in some way to have precipitated the crash. The estate was purchased at the auction by Mr. Duncan L. McDougall, of Messrs. Cochrane, Cassils & Co. The price paid was 61½c. on the dollar for stock, book debts, &c., amounting to \$74,882, realising with the duty about \$47,000, payable in cash.

The fire which occurred on June 4 in the laboratory of Messrs. Frederick Stearns & Co., of Detroit, destroyed some \$20,000 worth of property, which was, we understand, covered by insurance.

The thirty-second annual meeting of the American Pharmaceutical Association will be held at Milwaukee, Wisconsin, commencing August 26.

THE CHOLERA SCARE.

The cholera outbreak at Toulon and Marseilles has caused a sensation here, and the popular cry calls for scrupulous cleanliness, as regards streets, lanes, cesspools, &c.; but then the public as a body is one thing and individually quite another. Let the Health Committee notify a man to have his drains put in order, or his privy cleaned, and in nine cases out of ten he will not do it until ordered by the court. Druggists are beginning to think of increasing their stocks of chloride of lime, carbolic acid, diarrhoea and cholera mixtures, in view of the telegraphic reports from Europe. As to the treatment of cholera, the medical profession is by no means a unit on the point. It appears to me that medical societies

should discuss this very important matter, and leading medical journals should have a commissioner, or medical reporter, in the heart of the infected district. A little enterprise and inquiry might do a great deal in determining treatment. I see that army surgeons who have had practical experience in India recommend at the very outset of the disease a diffusible stimulant, such as brandy, with an opiate, such, for instance, as chlorodyne. A mixture very much in use here in what is locally called "Canadian Cholera," is composed of—Laudanum, 1 part; spirits of camphor, 1 part; tinct. capsici, $\frac{1}{2}$ part; tinct. rhei, $\frac{1}{2}$ part, and it succeeds admirably well. Thirty drops in half a wine-glass of water after each liquid motion. It is called "Dwight's Mixture," and is made by all druggists and sold in 25c. bottles.

The Council of the Ontario College of Pharmacy has been making things lively for those druggists who have not paid their annual licence fee. The judges, in most cases, have been lenient.

In this province the prosecution of one or two unlicensed druggists is on the *tapis*. In one case the party is a doctor, but, not being licensed to practise as a physician by the College of Physicians and Surgeons of this province, he cannot legally open a drug-store.

PHARMACY IN AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

MELBOURNE, June 16.

TO-DAY received from a Sydney correspondent a report of the eighth annual meeting of the Pharmaceutical Society of New South Wales. The meeting, which was held on the 12th instant, appears to have been well attended. Mr. F. Senior, the President of the Society, occupied the chair. The report, after the usual congratulations on the progress and prosperity of the Society, states that since the organisation of the Society no year has added to the roll of members so many names as that now passed. Mr. Fred. Wright is congratulated on the success that has attended his course of lectures, and it is stated that after January 1 next the examinations will include pharmacy, chemistry, materia medica, toxicology, botany, and practical dispensing. The financial affairs of the Society were reported on by the treasurer. The total receipts of the year amounted to 277l. 11s. 6d., and the expenditure to 182l. 4s. At the conclusion of the business portion of the meeting the President delivered his annual address, which will, no doubt, reach you in due course. During the meeting the Secretary, Mr. W. T. Pentney, made an explanation regarding the Pharmacy Bill, to the effect that "it had been contemplated to send copies of the Bill to every member of the Society, but the Bill having passed through the hands of the Council, it being the property of the Government, was sent to the Government, and, he might almost say, that any one not in the Administration was forbidden to see the Bill. The Bill was not the property of the Council, and had left their hands. They were only called upon to assist the Government as to the requirements of the chemists." Mr. James Mayne, at this meeting, proposed and carried three very important resolutions, which were—(1) That the Society shall be incorporated by Act of Parliament, upon the basis of the British Society; (2) the Society shall take under its direction and publish a journal, to be called the *Pharmaceutical Journal of New South Wales*; (3) that a Pharmaceutical conference be held at an early date in Sydney with the other colonies. I do not know if Mr. Mayne has any idea of the work entailed in his three propositions, but if he have the energy and perseverance to carry them out, he should receive the thanks of the whole of the Australasian pharmacists.

In Victoria matters are progressing satisfactorily. The College of Pharmacy, which is now an established fact, meets with general approval. Every appliance that money and foresight can procure has been obtained; the building is really a handsome one, and the lecture-hall is, perhaps, unequalled. When to this is added that the Pharmaceutical Society of Australasia is incorporated and registered under an Act of Parliament, I think Victoria will take some beating.

At the recent quarterly examination—held on June 2, 3, 4, and 5—twenty-seven candidates presented themselves for examination; of this number eighteen passed. The examiners, in their report to the Pharmacy Board, speak well of the general all-round improvement in the class of students for examination.

It has become a custom after the quarterly meetings of the Society to have a supper, and one took place at the Maison Dorée on June 6. There was an excellent attendance of both town and country members, and the gathering, which is always of an informal character, passed off very agreeably.

Mr. J. A. Allan, the late secretary of the Pharmacy Board at Wellington, N.Z., has recommenced business as a pharmaceutical chemist at Cuba Street, Wellington.

A journal is shortly to be issued in connection with the Medical Students' Society of Victoria. It will be the production solely of the medical students, and will contain medical and surgical papers, and also various matters of interest to the University generally. It is intended to publish the first number in July next.

The Government of Victoria, at the suggestion of Mr. C. R. Blackett, have presented to the British Pharmaceutical Conference and Library of the Pharmaceutical Society of Great Britain a copy each of Baron von Mueller's "Eucalyptographia." Any subsequent numbers that are published will be sent to make the decades complete.

I have received a copy of the prospectus of the New Zealand School of Chemistry and Pharmacy, Auckland, conducted by Mr. Henry J. Carson, under the sanction and regulations of the Pharmacy Board of New Zealand. The prospectus states—"The school provides students with a thorough practical and theoretical course of instruction in those subjects required for the examination held under the Pharmacy Board of New Zealand."

NEW ZEALAND.

FRESH LEGISLATION.

SINCE the removal of the Office of the Pharmacy Board to Auckland the members have been alive to the necessity of obtaining amendments to the Pharmacy Act under which they are constituted; also, legislation in the direction of a new Sale of Poisons Act, to replace the present one, which has been found to be needlessly lax. The provisions of the proposed Act would closely resemble those in force in Victoria, which have hitherto proved most beneficial to the public and the trade. In no instance has a prosecution under the Pharmacy Laws of Victoria been upset. I enclose copies of the Bills which the Board intend to bring before our next Parliament, the present one being on the eve of a dissolution.

THE PHARMACEUTICAL SOCIETY OF NEW ZEALAND is, I fear, in *articulo mortis*. The inertia of indifference, business burthens, and occasional tinges of local jealousy have caused a collapse of this once promising institution. I trust that some energetic Hanbury or Bell will arise in New Zealand, to show the Old World that, although separated by 16,000 miles of water, we mean to keep in the van of civilisation, and be *au courant* with modern scientific progress. Let us hope that before I again have occasion to refer to this, the reproach of apathy and indifference as to matters pharmaceutical in New Zealand shall have passed to the record of the "things that were."

"A COLONIST'S EXPERIENCE IN NEW ZEALAND"—A FEW FACTS IN DEFENCE.

Common fairness and justice to this colony compels me to reply to a letter you received through Mr. Philip H. Mason, which appeared in your April number. The statements therein contained are glaringly contrary to fact in many instances, and what appears most gloomy in the complaints is easily capable of explanation. In the first place, if this first-class assistant had arrived either a little sooner or somewhat later he would most likely have got a good situation. New Zealand is subject to the same inexorable law of supply and demand as other countries, and, no doubt, at that particular juncture there was a plethora of assistants, just as there has been frequently on the contrary, to my own knowledge, a

dearth of reliable hands. From the letter, I judge that Mr. Mason's former assistant was at Dunedin at the latter end of 1883, when he states "business was frightfully dull," &c. Now, at that period, business was just the reverse at Auckland and the northern portion of the colony—every line of business abnormally brisk, none unemployed that cared to work; carpenters earning 10s. to 12s. per day, bricklayers and stonemasons 12s. to 14s. per day, ordinary labourers, gardeners, &c., 7s. and 8s. per day. Buildings in progress could be counted by hundreds, and many new-comers had to reside in hotels and lodgings, as there were no unoccupied houses. This is, to a great extent, the prevailing state of trade in Auckland at present. That "travelling is expensive and posting arrangements long delayed" is incorrect. New Zealand has one of the most perfect steam services in the world (read Archibald Forbes' "Australian Tour"). The Union Company possess a fleet of twenty-three good vessels, and run them punctually. All the large ports have a bi-weekly interchanging mail service. A letter from Auckland would reach Dunedin (nearly 1,000 miles) in six days. However, for quick communication, we use extensively the "delayed-telegram" system, which costs only 6d. for ten words, and is delivered anywhere throughout the colony per post the next morning. There is surely not much delay nor expense in this. Again, to travel from Dunedin to Auckland—*i.e.*, from the south to the north of the colony, a distance of 955 miles—costs 8*l.* for saloon and 5*l.* for steerage, which is not unreasonable, considering the admirable accommodation afforded. Replying to the statement that "New Zealand is a much over-estimated, over-taxed, and over-populated country," I admit that the public debt is the largest of all the Australian Colonies, viz., five times our annual revenue, as against Tasmania's and Victoria's four times their annual revenue; nevertheless, we maintain that the money has been, and is now being, expended on reproductive public works, such as railways and harbour-works, which are a means towards the great purpose of opening up and settling our millions of fertile virgin acres. In the North Island we are located on the outer edge of vast tracts of good land that lie under as fine a climate as any in the world. So soon as population increases, so, *per contra*, taxation will decrease and internal wealth become developed. Although taxation is high per head it is not felt, as all classes of the community enjoy a fair distribution of wealth. We have none of the very poor, no destitution, and pauperism is unknown. To show the absurdity of using the term "over-populated," I may state that, notwithstanding the fact that New Zealand has increased her population (now 500,000) 55 per cent. in six years—as against Victoria, 14 per cent.; New South Wales, 29 per cent.; Queensland, 57 per cent.; and Tasmania, 7 per cent., for the same period—she has as yet only five persons to the square mile. Need I remind your readers that England and Wales have the dense population of 433 persons to the square mile, Scotland 119, and Ireland 165? In case it should be said that the density of population of Australian Colonies was referred to, I may mention that Victoria and Tasmania are more densely populated than New Zealand. That "no railroads are being constructed" is also a wild statement. Branch lines are being made in the middle island, and a train-truck line is being surveyed through the north island, whilst three or four private companies are constructing lines to develop special districts and connect with Government railroads. Permit me to sum the matter up very shortly. The result of my experience, extending over twenty years, is that, in 99 cases out of the 100, the fault lies in the man, and not the country. Men arriving in a new place find an entirely altered set of circumstances to encounter, and quite different to what was pictured in their imagination. They usually expect some vacant situation waiting their arrival, in which they, as a rule, are disappointed. Upon getting a situation they find themselves much at fault, and a great deal to learn and unlearn before they become colonised. The colonial drug proprietor also finds that many who profess to be "first-class assistants," and produce excellent testimonials, are utterly lost in the bustle of a colonial business. They turn out, as it frequently happens, to have been only in one department of a large establishment in England, and unacquainted with the general requirements of a good all-round assistant.

I will add what is well known in the trade here—viz., that, owing to the numerous openings to go into business, and

facilities held out by the wholesale houses to launch forth upon the voyage of proprietorship, really good trustworthy assistants in the drug business are scarce, and once employed not readily parted with. Having trespassed thus far in defence of one of Briton's best colonies, permit me to quote the following from the Premier's financial statement just made to Parliament:—"The present depression is traceable, first, to habits of extravagance arising out of thirteen years' wonderful prosperity; second, over-trading—in the year 1882 only importation of goods to the extent of 1,000,000*l.* sterling has taken place; third, the extraordinary low price of our chief articles of export—wool and grain. It is said that wool and grain are never very low at the same time, and this is, as a rule, true. Unfortunately, it has not been true during the last year. These causes sufficiently account for the depressed condition of trade in some districts of the colony."

LIFE ON BOARD AN EMIGRANT STEAMER, BEING A TRIP TO AUSTRALIA.

BY AN ASSISTANT.

AFTER a five months' course of H₂S fumes I was enabled to satisfy the examiners, and, having secured my certificate, looked around me for some means of washing away those noxious inhalations afore mentioned. Thinking of China, I applied to a firm of export druggists in the City, who, failing a Chinese appointment, gave me an introduction to the emigration officer of the New South Wales Government. A steamer, to wit, the *Belgravia*, was about to sail for Sydney, with an exceptionally large number of emigrants. The surgeon-superintendent required a qualified assistant, and, since my credentials were those of an historical house in the West-end, very little difficulty secured me the appointment. By post the following day a very imposing letter, on Her Majesty's service, arrived, containing the official appointment, guaranteeing a free passage home and a small honorarium; furthermore, an instruction to join the ship at Plymouth on March 5, 1884. Just time for a run up North and bid good-bye, and then a rush to the extreme South. Midnight, March 5, saw me safely at Plymouth.

The following day, Thursday, I made my way to the Government dépôt, and there saw all the folk, men and women, old and young, with innumerable bairns, with whom I was so shortly to be on such intimate terms.

Some 800 odd emigrants seeking a new country for so many different reasons. Not a little instruction and amusement might be gained by studying the faces among this motley crowd. There one sees the old man, disappointed, bankrupt, taking his family of half a score away from the scenes of his aforesome success and his present fall; here the youth just wedded to the lassie he loves, and, not contented with love in a cottage, seeks fresh fields and pastures new.

Plymouth is worthy to be the last place one must bear away in remembrance of old Albion. I think the beauty of its harbour only surpassed by that of Port Jackson, to which we were bound. I took an early opportunity of boarding the *Belgravia*, and securing my cabin, which was a most comfortable one, aft in the saloon. The *Belgravia*, one of the largest carrying boats afloat, was anchored just within the breakwater, and gave one an idea of such stability that it was a pleasure to tread her decks and sign oneself one of her crew.

After a trip round the ship I found the dispensary and took charge. At first it did not look encouraging or inviting, nothing being unpacked. Found and retained the surgeon's steward, and, with his assistance, unpacked and made things somewhat shipshape.

The medicine-chest and medicines were supplied by Messrs. Dakin Brothers, and proved to be of very good quality, if not, in two or three cases, of sufficient quantity.

The dispensary was the surgeon's room, with the sleeping accommodation removed, and was fitted with a good case, into which we put surgical instruments, lint, &c. A desk, at

which the doctor sat, a swinging washing-stand, and a dispensing-counter with drawers and shelves, two filters, and a couple of chairs completed our fittings. Three rooms next to ours were fitted as hospitals, and, not being wanted as such, were used as waiting-rooms.

On Friday, March 7, all the emigrants embarked, and towards evening we sailed with nearly 1,000 souls aboard. A few days of rolling and pitching, of sea-sickness and home sickness, and we found ourselves out of the Bay of Biscay, and all settled down to our new life.

One day's experience will suffice for my share, and then I will turn to the general arrangement of those aboard.

At nine o'clock every morning the dispensary was opened, the doctor took his chair, the dispenser held his note-book in readiness, and the patient was shown in by our hospital assistant. A draught *statim*, or a mixture to be called for at three in the afternoon, and the bell rang and another patient appeared, and yet another. Some two score individuals were thus seen and prescribed for with divers complaints, real and imaginary, so that the experience thus gained in diagnosis and in prescribing was invaluable. After seeing the sick the doctor took me round to see the healthy—that is, we inspected the ship, he instructing me as to orders for cleaning, &c. After a week or two this duty of inspecting the berths and beds daily was transferred to me, the doctor going round now and then. This proved a good plan, since, visiting daily, one does not catch those little omissions so readily as when one goes down occasionally.

At three the folk called for their medicines and for orders for medical comforts. At this time a dozen or more mixtures would be called for, and, of course, the inevitable counter-prescribing could not be dispensed with. People would persist in coming at that time in preference to the regular hours. The doctor allowed me to undertake simple cases, since it relieved our other sittings, so that towards the end of the voyage I had quite a little *clientèle* of my own.

At 7 P.M. the doctor again came to the dispensary, and we saw a like number of patients, and, I hope, cured or satisfied them.

Before retiring I had to make another round of the ship, and see all right for the night. Coming back to the dispensary, orders for the morrow, and the constables of the several departments to instruct in the surgeons' wishes. A quiet chat with one of our genial Scottish mess finished my day's labour, or—shall I say?—pleasure.

Some idea of the ship will be gathered from the following:—Right forward, in the forecastle, the crew were quartered. The less one says about their quarters the better, since they did not come in my round. Some eighty men comprised the crew. Then came No. 1 and No. 2 hatches, which opened from the main deck into the married people's compartment. Each couple or family had a berth or berths, which were rendered quite private by the drawing of a neat curtain. The mess-tables were arranged along the centre. Some forty messes, of an average of ten, were in this compartment, each mess having its captain, with a table and set of necessary utensils. The captain was general caterer, fetching the provisions from the galley, and being responsible for the cleanliness of his people. Three stout men in each compartment were appointed as constables to keep order.

Down No. 3 hatch the single men were congregated, their quarters being rather warm, on either side of the boilers. Nearly 200 young men are by no means easily managed, and we had great difficulty in breaking them into ways of cleanliness and order. The sea makes one inexpressibly lazy—so indolent that the youths wanted to roll out of bed and get on deck, there again to lounge, forgetting the non-existence of chambermaids and scullery-girls. This was remedied by judicious forfeiting of beds and stoppages of food, which soon brought those inclined to be lazy into wiser paths.

Abaft the engines came No. 4 hatch. Down here we had about twenty messes of married folk. Then came the poop, which was on the top of the saloon, and beneath the saloon was the fifth compartment, where we had the most precious part of our cargo, the single women—precious beyond telling, if the care taken of them is any criterion. Under the charge of Miss Bant, a very pattern of lady-matrons, assisted by another lady and a quartette of sub-matrons, we had some 150 girls, mostly of very good class, and many of exceptionally good looks. Their compartment was the model of the

ship, the deck being white with holystone, the tinware equal to silver-plate, and the beds a marvel of neatness. The matron kept them in very good health by occasional administrations of mist, senna comp., which counteracted the effect of the abundance of food and the lack of exercise in ship-life.

Now about the voyage itself. It was all very well the first day, but on the second I was suffering frightfully from sea-sickness. I took a one-sixteenth part of a grain of apomorpha repeatedly during the day, and on the third day was well enough to attend upon other folk.

The dispensary on these first days formed a great contrast to an Oxford Street pharmacy. Pitch and roll, as ships only do in Biscay, oh! One gets accustomed to the strangest things, and gradually it became quite natural in weighing and measuring to go with the motion of the ship, and I suppose if I were again in a London house I should be securing all the bottles for a day or two. The sea was so bad the hatches had to be battened down, thus making the horrors more horrible. We were all right glad when we heard the anchor go in the harbour of Funchal, the capital of the Madeiras, and soon forgot our troubles in bartering for fruit, baskets, feathers, chairs, &c. Having a few things to get from shore, I got permission to go myself, and was very pleased to put foot upon *terra firma*. And such land, too! Jumping ashore from the boat as it was pushed through the small surf, I was conducted to the ship's agents, where I gave my order, and then was my own master for the day. Of course, upon seeing an English pharmacy, I went in, and the assistant showed me round. A very handsome shop, cool and inviting. The counter was \square -shaped, in the centre, the customers walking all round it. The English and American visitors make it a busy place. Further on, seeing another interesting shop, I went in that also. A Portuguese pharmacist, he understood no English, but I soon made him aware that I was one of the craft, and, seemingly delighted, he took me all over his premises. The dispensing here was done behind. The prescription-book was worthy of note—an immense volume, spread wide open, the items of the prescription being all placed in one line, together with the prescriber, patient, dose, and price in separate columns. Coming across a water fountain, he was highly pleased to say "Water," which he repeated two or three times.

Madeira itself is very picturesque. The town Funchal has narrow streets, running at right angles, and forming large squares here and there. The streets are all paved with smooth stones, there being no wheeled vehicles, sledges drawn by oxen and men being the mode of travelling. Great fun to walk away up the hills, still upon paved roads, and to take a sledge down. The sledges run down at a fearful speed, like Canadian tobogganing, the man at the back simply guiding it by putting the rope which encircles it port or starboard.

The vine (nearly ruined by the phylloxera insect) and the sugar-cane are the chief productions. I understand that the island is very poor in all except natural beauty, and the officials certainly do not belie this, looking miserable and ill-preserved.

From Madeira to the Cape Verde Islands was a very pleasant run. St. Vincent, the port into which we put, is grandly situated, and that is all one can say. The mountains around are quite innocent of anything green, although the different-coloured surface soils give a pleasing effect. St. Vincent depends entirely upon imports for sustenance. Had no desire to land here, but sent ashore for some castor oil. It was sent aboard in four different-sized bottles, without labels, and bungs cut down for corks; but the quality was extraordinary, infinitely better than many of the so-called olea ricini insipida both in taste and action.

Going through the tropics our chief complaints were diarrhoea and colds. The diarrhoea was checked in most cases by a small dose of castor oil, with or without an opiate, as indicated. As a preventive, also, acidulated water was given to those who asked for it, and was chiefly in request by the stokers and engineers. In giving castor oil to ladies I invariably found about $\frac{1}{2}$ oz. of cognac effectually cover the taste and prevent nausea. The cases of colds and loss of voice, caught by sleeping on deck and injudicious clothing, were numerous, and, of course, treated variously, as each case demanded. The cold-water cure, a compress for sore throat and loss of voice, proved very effectual.

The amusement of the folk aboard was a great desideratum, and the doctor gave me *carte blanche* to arrange anything I pleased. First, we got a band together, five instruments, and very good. With this we felt justified in drawing out the programme for our first deck-concert. It was a grand success, which was repeated on several occasions. The single women, also, gave some very nice afternoon concerts on the poop, at which only a favoured few could attend. The doctor, captain, officers, and myself, of course, were there to hear the fair ones sing.

Feeling the want of a literary organ, the purser, second engineer, and myself started a weekly, of which I was constituted editor, the engineer printer, and the purser agent for distribution. With gelatine from the stores, glycerine from the refrigerating-room, and a little carbolic acid from the dispensary, I managed to make a very good facsimileograph, the dish being made by the engineer. For lack of better ink I made some with violet aniline dye and water, and could take twelve or more very fair copies of the *Belgravia Times*.

The *Times* was received with acclamation, especially after leaving Cape Town, where we had an artist added to our staff. Mr. Lowe took several striking likenesses, which were duly published in the *Times*. The editor was strictly *incognito*, else the dispensary would certainly have been stormed on one or two occasions. Two hundred copies were struck off at Sydney and circulated. Our next calling-place was Table Bay, where we arrived on Sunday morning, April 7. Wanting some drugs, I went ashore. All pharmacies open; entered several, and got some valuable information. The drugs supplied to the ship were simply wretched, and the style bad—the sal volatile evidently quite innocent of essential oils, and the spirit quite smoky. The Dutch pharmacies are first class, especially that named the "Swan Dispensary."

Cape Town is more like a Malay settlement than an English colony, every second face one meets being different coloured. The costumes are very pretty, especially the Malay boys, who are happy only when they are driving something—a goat generally, or, if not, each other. The streets are wide and boldly laid out, but the buildings of any pretension few and far between. The Dutch are such a contented people that what serves for father serves for son, and so progress is stopped. The Table Mountain forms a magnificent background to the town, approached by a splendid avenue of oak trees, and on spurs of the mountain one sees the silver-leaved pine trees, which looked very pretty. The cathedral is not worthy the name, and, truth to tell, I was disappointed with the South African metropolis.

We steamed out of the bay at sunset, having an addition of thirty saloon passengers to our number, who lessened the monotony of the remainder of the voyage considerably, and supplied food for our weekly paper, which was at this time in danger of collapse. Most of these passengers were leaving Cape Town on account of the very bad times.

A run of twenty-five days brought us to Port Jackson, without anything of special interest occurring. Concerts, dances, baby-show, and the like occupied the time and talent of the company.

The coughs and colds were numerous, since going far South it was very cold, and the difficulty of treating them was increased by our falling short of medicine, and my first order on reaching Sydney was for cough medicines.

A few days before reaching our destination the doctor gave me permission to arrange for a public distribution of prizes to the school children. Recitations and songs were practised, so that on the day fixed the youngsters afforded us an afternoon's real amusement. Dr. Huxtable distributed the prizes, making appropriate remarks to each scholar. At the conclusion, when the children had withdrawn, a committee of the emigrants waited, and, on being called in, desired in the name of their fellow-emigrants to present a testimonial to the surgeon-superintendent for his skill in the management. After the doctor had replied they had another for the humble apothecary for what they termed his kindness. This was the more agreeable since the mothers present endorsed it with acclamation. Thus terminated the voyage, which was uniformly pleasant and successful, so eminently so that when the Emigration Board met on the poop, and all the people were individually asked for their complaints, none were forthcoming. We cast anchor on Friday evening,

May 2, and were quarantined for one night, although we had no disease aboard. The next day, Saturday, *pratique* was granted, and the single women were landed and sent to the Government dépôt. The married people and single men were allowed to stay aboard four days in order to look for work. Things are not bright in Australia, so that, although many got exceptional berths, others were weeks waiting for work. Farm labourers and single women were absorbed in a day, and as many more might have been.

A month's stay in Sydney enables me to say a little about it, and more especially about our profession. Introductions from Professor Attfield were sufficient to gain me the friendship of one of Sydney's most courteous citizens, W. T. Pinhey, Esq., Honorary Secretary of the New South Wales Pharmaceutical Society and to the Board of Pharmacy, also a magistrate and deputy-coroner. His sympathies are all with the rising generation, and he did everything in his power to make my stay profitable. The Society and the Board of Pharmacy are so dovetailed that they may be said to be synonymous. The Board holds examinations partly written and partly *viva voce*, as occasion demands, and grants certificates for the sale of poisons. I enclose a synopsis of the examination, and also some of the papers, which seem quite equal to Bloomsbury.

Sydney pharmacists are equal to, or better than, London druggists, because in the colonies surgeons do not dispense, so that our profession gets a chance.

A qualified assistant may get from 3*l.* to 4*l.* a week. He may board comfortably for 25*s.* a week, and clothing is about 25 per cent. dearer than in the old country.

One might commence a business with much smaller capital than in England, owing to the assistance of such wholesale houses as Elliott Brothers, and Felton, Grimwade & Co.

One cannot leave Sydney without a mention of the Botanic Gardens, which, bordering upon the beautiful harbour, make a perfect Garden of Eden.

June 7 sees me aboard an Orient steamer homeward bound. As this voyage gave opportunities to see the other two cities of Australia, I must say a few words about them.

Melbourne, the metropolis of Victoria, and, mayhap, some day of Australasia, is not very well situated. It is half-an-hour's ride from the port, and lies very low. The city is splendidly laid out, all the streets being wide and long, and at right angles. The great sameness of such streets is, perhaps, a drawback. The pharmacy of Melbourne is that of Messrs. Francis, a worthy offshoot of that yet vigorous stem which John Bell planted. The position of the pharmacist in Australia strikes one as altogether better than his British brethren, being under the direct protection of the Government and recognised as a professional man. Four days here were soon passed. A row on that dirtiest of all rivers, the Yarra Yarra, and one lands in the Government domain, amid gum-trees innumerable. Thence a walk to the Botanic Gardens, which, although they lack the natural beauty of those of Sydney, yet are artificially better. On the subject of botanic gardens, how is it that all the colonial gardens are much superior to those in Regent's Park? For completeness of design the Adelaide gardens are perfect, the Economic Museum being beyond praise. The preponderance of the German element is very evident in Adelaide, and this probably accounts for the interest taken in botany.

The voyage home was without incidents, and one only felt it in the tremendous heat of the Red Sea, which is very trying. The Suez Canal, that much talked of and fought for highway, is very interesting. Some of the telegraph-stations kept by Frenchmen were really models of neatness, and surrounded by carefully-cultivated tropical plants. Suez and Port Said have nothing to recommend them beyond the interesting equality of the aborigines. The native portion of Port Said had recently been burnt down, and all the Arabs were encamped upon the desert. At Naples the Italians would have nothing to do with a ship coming from plague-ridden Egypt, and it was a great disappointment to look for a whole day at the roofs of beautiful palaces and not be able to go and see them. One cannot leave Naples without destroying that interesting poetical fiction, "See Naples and die." I do not feel like dying, since Port Jackson in natural beauty is quite equal to Naples. Another week sees us in England, and my experiences in the hands of the editor of THE CHEMIST AND DRUGGIST, with a recommendation for all to do likewise.

The Druggists' Lawyer.

THE RIGHTS AND RESPONSIBILITIES OF PARTNERS AND OTHER PERSONS RECEIVING SHARES OF PROFITS.

PARTNERSHIP may be entered into either formally or informally. A formal partnership is one in which the arrangements between the partners are entered into by deed or other writing, commonly called articles of partnership. An informal partnership may be constituted in various ways, thus, if a man invest money in a business, or allow his name to be used as a partner, or do anything which may induce outsiders to supply goods to the firm on the understanding that he is a member thereof, he may be held responsible as a partner, with the exception which we shall note presently as to the investment of money under the provisions of the Partnership Law Amendment Act. We do not propose on the present occasion to examine the rules of law applicable to joint adventures, which constitute a special partnership for the purpose of one transaction or more and leave the general relations between the parties unaffected, but only to consider the subject of general partnerships, and the highly interesting law of limited liability, as it affects private partnerships.

When a formal partnership is entered into, the articles of partnership ought to provide for every contingency which might happen, as well as for the mode of managing the business and the distribution of profits and losses. Any deficiency in this respect is likely to lead to costly litigation if the partners differ before the end of their business connection, which is by no means an unusual occurrence. Generally, even though the business may be a small one, it will be desirable to have the agreement drawn by a solicitor, whose fees will be a profitable investment for the partners if they are thereby saved from future litigation. Even if this effect should not be quite attained, there will be some advantage in narrowing the field of contest, which a properly-drawn agreement is certain to do.

A well-drawn deed or agreement of partnership ought to provide for the amount of capital to be brought in by each partner; the limit within which extra capital may be brought in by either partner; the rate of interest to be allowed thereon; the monthly or quarterly drawings by each partner; the appropriation of premiums received with apprentices, &c.; the payment of rent and other expenses; and the mode of making up the annual balance-sheet and the distribution of the net profits. If all the profits are not to be divided every year, but a portion added to the capital for the purpose of extending the business, great care ought to be taken in drawing the special clause providing for the way in which the amount to be left in is to be arrived at. It should not be a fixed proportion of the profits, because in case of a bad year this might not leave enough for the partners to keep up their private establishments: on the other hand, it is not desirable to agree that the whole excess beyond what is considered a fair allowance for maintenance should be left in the business as a fixed obligation, though we have known this rule lead to great wealth, the partners, in the meantime, being kept down to the expenditure which was thought sufficient when they began but was quite inadequate for their position ten years afterwards.

The deed will also state which of the partners shall be required to devote all his time to the business, and which shall be at liberty to give to it so much of his time and attention as he may think necessary or desirable. If certain

duties are to be thrown exclusively upon one of the members of the firm, this should be clearly shown, though it may be left optional for any new arrangement to be made thereafter. The place or places of business, the style of the firm, the bankers, and the power of drawing cheques, &c., are all things which must be clearly defined. And many other matters may require attention according to the kind of business which is to be carried on. Each style or class of business (town and country, wholesale and retail) has its peculiarities, and these should be carefully kept in view.

The course to be taken in case of dissolution of the partnership will require careful attention. In some cases, where one of the partners has an old-established business and the other is a stranger to the district, the latter is required to enter into a covenant not to carry on business after the dissolution of the partnership within a certain distance from the place of business then occupied by the firm. If this intention is not clearly expressed it may be defeated by some technical objection, for the Courts require anything which is to operate in restraint of trade to be strictly proved; and it must also be reasonable, or it will be set aside as being contrary to public policy. Thus, a general agreement to abstain from carrying on the business of a chemist and druggist without any limitation as to either time or space would not be enforced, because it would be unreasonable, while a covenant not to do so within ten miles of the town of A within five years after the termination of the partnership would be upheld. The clause as to this restriction ought always to be so drawn as to give the remaining partner the option of suing for damages of a stipulated amount, or of applying for an injunction for restraining the outgoing one from carrying on business at all within the prescribed limits, for the justice of the case might not be met by the damages recoverable. Provision ought to be made against indirect connection with a business carried on in the name of some other person.

The mode of valuation, the option of purchasing the stock and goodwill, and the time to be allowed for payment by the surviving partner, in case of the death of either of them, will all have to be clearly defined, or difficulties may arise which would be likely to be prejudicial to the survivor, and in a minor degree to the executors or administrators of the deceased partner.

A carefully-prepared arbitration clause ought never to be omitted. We know many legal practitioners regularly omit this clause, but we cannot agree with them, although we need not discuss their reasons in this place, it being enough to say that it will be prudent for the parties themselves to see that such a clause is inserted. They may not require it, but if they should have any serious difference the clause would be very useful.

Although it is not essential, we always advise the insertion of a clause binding the partners respectively not to be surety or bail for any person without the previous consent in writing of their co-partners. Many a good-natured man has been thankful for this restriction, which affords an unobjectionable reason for not doing what his judgment may disapprove, but which otherwise he could scarcely refuse to do without the risk of losing a friend.

A partnership may be entered into for a fixed period, or without any time being mentioned. In the former case the joint trading will come to an end without any notice being necessary, although the connection might be severed earlier by mutual consent, or by the Court on sufficient cause being shown. When the duration of the partnership is indefinite provision ought to be made as to the notice to be given for dissolution. Sometimes the partners are placed upon an equal footing in this respect; at other times the senior

partner has special power placed in his hands in this as in other respects.

The partnership being duly constituted, we must now consider the consequence thereof as between the parties themselves, and as between them and other persons. And there will be some advantages in taking the latter branch of our subject into consideration in the first place.

Any person who deals with a firm has no need to have the collective agreement of every member of the firm, inasmuch as every contract by a partner on behalf of his firm is binding upon the partnership assets and every individual member of the partnership. This is absolutely true as respects any transactions of an ordinary character within the scope of the business carried on by them: and it may be, in a modified degree, true in respect of irregular transactions. Thus, when a member of a firm sells part of the property of the firm out of the ordinary course of business for his own profit alone, unless the purchaser had notice of the intended wrong he would be protected, because it was not required of him to inquire into the right of the vendor to dispose of goods belonging to the firm of which he was known to be a member. But, if the other partners had, before the completion of the sale, given notice to the purchaser that they objected to the sale, the transaction would not be binding upon the dissentient partners. There are, also, some matters in which a partner cannot bind his co-partners without their express consent. Thus, in case of a dispute between the firm and any other person (if there be no arbitration clause in the articles of partnership), the ordinary course is for the question at issue to be disposed of in the Courts established for the purpose of administering justice in such cases, and, although it may often be beneficial to refer such disputes to arbitration, yet no man can be compelled to be a party to a submission to arbitration against his will; and, therefore, if one partner agrees to refer a partnership dispute to arbitration without authority from his fellows, the reference will not be binding upon them, but they may insist upon having the case sent for trial in the ordinary way. Or, if one partner should execute a deed in the name of the firm, even if his doing so had been sanctioned by the other partners, it would not be sufficient to bind the firm, unless such execution had been sanctioned by a power of attorney or other document under their seals: for it is a well-established principle that the execution of a deed by one person on behalf of another can only be authorised by a deed under seal. Whatever solemnities may be requisite for the due execution of the final instrument must also be observed with respect to the authority.

There is an important difference between the liability of nominal and dormant partners. Thus an ostensible partner must discharge his liability by notice, as explained in our Diary for the year 1883, even as to liabilities contracted after he ceased to be a member of the firm; while a sleeping partner, whose name has never been known to the world as being connected with the business, can only be held responsible in respect of debts contracted when he was a partner: the reason for this distinction being that in the one case the name of the person was used for giving stability to the firm, and so facilitating the obtaining of goods on credit, but in the other case it was not so. In both cases, if a partner retires he must see that all debts then due are paid before he can be free from responsibility.

As between themselves, one partner can require his co-partners to account for all the partnership assets which may have come to their hands respectively, and also for the consequences of any wilful misconduct with respect to their dealings therewith. Formerly, if a partner robbed the firm, and disposed of its property in such a manner as would expose another person to a charge of theft, he could only be

held responsible under the jurisdiction of the Court of Chancery, requiring him to account, which in general was no remedy at all, for when a man had got to the extent of robbing his partners he was not often worth suing. This, however, was remedied in 1868, when an Act of Parliament was passed by virtue of which any person being a member of any co-partnership, or being one of two or more beneficial owners of any money, bills, notes, securities, goods, or other property, may be indicted and punished for stealing or embezzling the same, in like manner as if he had not been such member, or one of such owners. By means of this very useful enactment a dishonest partner may now be effectually dealt with in cases where he was formerly practically beyond reach.

But in cases which fall short of criminality the remedies of partners as against each other are capable of being enforced in the High Court or the County Court, according as the value of the assets does or does not exceed 500*l.* Naturally the proceedings are more complicated than in an action for goods sold and delivered, or any other simple kind of action, for accounts have to be taken in order to ascertain how the several members of the firm stand with the others and with the firm itself, and this is often the cause of much money being expended in costs, especially where the drawings have been irregular or the books loosely kept. When a partnership has been dissolved, and the accounts fully made up and signed by all the partners, a retiring partner may bring an action against the continuing partner or partners for the amount found to be due to him; but this is not a very common case. Generally, when litigation arises, it opens up the whole of the partnership accounts, which have to be investigated and vouched before an officer of the Court, each party being represented by a solicitor, and this is costly. When the proceedings have to be taken before an arbitrator the costs will be considerable, but an uncompromising fight in an action is far worse.

In case of misconduct by one partner, before the partnership has expired by effluxion of time, the partnership may be dissolved by an order of the Court, and in such a case the taking of accounts will follow as a part of the remedy to be granted to the complaining partner. Hence it is very desirable that partners should be well known to each other before the connection is entered into. An unprincipled partner may inflict irreparable mischief upon the business before he can be got rid of; and the worst of this part of the affair is that a partner who does so much mischief is generally a man of straw, so that the substantial partner has no sufficient remedy for the injury inflicted upon him.

The liability of partners in respect of the partnership transactions is unlimited, which is a very serious consideration for a man of means who intends to enter into partnership with a person without capital. Assuming the possibility of the business not being successful, the monied partner ought to be prepared to risk the whole of his property in the speculation. Not merely the capital which he has agreed to invest in the business, but the whole of his possessions, may become involved. So long as he has anything, and there are any outstanding liabilities of the business, he may be called upon to pay. And until the year 1865 this unlimited liability attached to every person who lent money to another or others on the understanding that he was to have a share of profits instead of interest, or that the rate of interest was to depend upon the amount of profits made by the borrowers. This has been remedied by an Act of Parliament passed on July 5, 1865, whereby it was enacted that the advance of money, by way of loan, to a person engaged, or about to engage, in any trade or undertaking, upon a contract in writing with such person that the lender shall

receive a rate of interest varying with the profits, or shall receive a share of the profits arising from carrying on such trade or undertaking, shall not of itself constitute the lender a partner with the person or persons carrying on such trade or undertaking, or render him responsible as such. It will be observed that the language used is very guarded; the lending on the terms referred to is not of itself to make the lender responsible as a partner; and, therefore, care must be taken by him not to interfere in the business in such a way as would lead to the inference that he was really a partner, either active or dormant. There ought not to be any great difficulty about this, and yet we have known experienced solicitors make mistakes in this respect, such as drawing an agreement which amounted to articles of partnership, and then concluding with a reference to the Act of Parliament, which was altogether inoperative. Bearing in mind and avoiding this danger, the enactment is a very useful one, and in effect introduces into private partnerships the law of limited liability, which in its most familiar aspect is associated with joint-stock companies. But, like all other kinds of limited liability, this has one drawback: in case of the bankruptcy of the borrower, or of his dying in insolvent circumstances, the lender is not entitled to recover any portion of his principal money, interest, or share of profits until the claims of the other creditors of the borrower for valuable consideration in money or money's worth have been satisfied. This is fair and reasonable. If a lender takes exceptional benefits, he ought not to be put upon the footing of an ordinary creditor. It ought to satisfy him that he gets extra interest with limited liability, for, at the worst, he can only lose the money which he has lent.

The same Act contains similar provisions as to the vendor of the goodwill of a business who sells in consideration of an annuity or other payment out of profits in respect of the unpaid purchase-money; which he will lose in case of bankruptcy, unless there should be a surplus after the ordinary creditors are paid in full. It is also enacted that no contract for the remuneration of a servant or agent according to the profits shall render such servant or agent responsible as a partner, nor give him the rights of a partner in the business. And that annuitants being the widows or children of deceased partners are not to be deemed to be partners or subject to any liabilities incurred by the person carrying on the business out of which the annuities are paid.

If more than twenty persons carry on business in partnership (or ten in the case of a bank) the partnership is illegal, and the concern ought to be registered as a joint-stock company under the Companies' Acts. This, however, is beyond the scope of our present purpose to discuss. We gave some information on the subject in our Diary for 1883. A private firm carrying on business for the acquisition of profit cannot recover debts due to them if there are more than the allowed number of partners.

In case of bankruptcy the joint estate is applicable in the first instance in payment of the joint debts, and the separate estate of each partner in payment of his separate debts. If there is a surplus of the separate estates or either of them, it is dealt with as part of the joint estate. If there is a surplus of the joint estate, it is dealt with as part of the respective separate estates according to the right and interest of each partner in the joint estate.

AMYL NITRITE.—In the second number of the *Asclepiad* Dr. Richardson gives a formula for the administration of amyl nitrite by the mouth:—Amyl nitrite, pure, $\text{m} \text{xxxvi}.$; ethylic alcohol (sp. gr. 830), $3\text{vi}.$; pure glycerine to $3\text{iss}.$ To make a mixture of twelve doses. One fluid drachm to be taken in a wineglassful of warm water. In asthma this method is specially recommended.



THE SPECTACLE TRADE.

Herbert v. Furness.

ON July 17, in the Clerkenwell County Court, before Mr. Justice Eddis, Messrs. Herbert & Godfrey sued Mr. J. M. Furness, of 137 Fitzwilliam Street and 51 Milton Street, Shefford, for $9\text{l}. 12\text{s}.$, the value of certain spectacles alleged to have been ordered by and delivered to defendant.

Mr. Myers appeared for the plaintiffs, and defendant was represented by Mr. Haigh, instructed by Messrs. Nash & Field.

The plaintiffs had no witnesses, but called the defendant. According to his evidence the plaintiffs' eloquent traveller called on him in July, 1883, and persuaded him to take up the spectacle trade, saying that he would make $200\text{l}.$ a year by it. Defendant ordered spectacles to the value of $9\text{l}. 12\text{s}.$, signed an order on a printed form, and was given a copy of it. He found they did not sell, but paid for them at the time agreed. In October the traveller called again, but the only order given was a verbal one for a few pairs of pebble spectacles as samples, about $15\text{s}.$ worth; in any case less than $20\text{s}.$ worth. They were to be sent promptly. There was great delay, and defendant wrote countermanding order on that account. Plaintiffs wrote that they would not accept the countermand, and would send the goods off. The invoice sent was for goods to the amount of $9\text{l}. 12\text{s}.$ Defendant wrote at once saying he was surprised at the way his order had been magnified. When brought to his shop by the railway company at the end of November he refused to accept delivery. The plaintiffs then wrote a threatening letter saying that the goods were lying at the railway office at defendant's risk, and when they were again brought to the shop they were taken in by the porter in defendant's absence. As he had ordered $15\text{s}.$ worth he took them in, and wrote saying that they were lying in his shop, and asking what he was to do with them. Since then the traveller called again, and defendant was asked to try and sell them to some of his neighbours. This he did, but failed. Plaintiffs' solicitor admitted there was no signed order, but relied on passages in the subsequent correspondence as admitting the claim.

Judgment was given for the defendant on the ground that it was admitted that there was no signed order; that when he did take in the goods he was justified in doing so, because he had ordered $15\text{s}.$ worth, and also wrote stating that he had not ordered them and would not accept them. The judgment for the defendant was with costs, but not on the higher scale, as the $15\text{s}.$ for which liability was admitted had not been paid into Court.

A CHEMIST'S WIFE'S BUSINESS.

ON August 5 a case was called before the Judge of the Clerkenwell County Court, in which the Chemists and Druggists' Optical Association, 120 Southampton Road, E.C., were plaintiffs, and Mr. John Richard Richardson, chemist, of 9 Prince of Wales' Road, Kentish Town, defendant, the claim being $11\text{l}. 1\text{s}. 8\text{d}.$ amount of debt and costs upon a judgment obtained in that Court in the previous April. Mr. Henry Myers, who appeared for the plaintiffs, asked defendant what he was prepared to offer in liquidation of the debt, and received the reply that he was not prepared to offer anything. The Judge: But you contracted the debt, and must pay something. A gentleman in Court, who said he was a solicitor acting for the wife of defendant, produced a deed which set forth that the whole of the stock, fixtures, furniture, and lease belonged to defendant's wife, these having been made over to her at the date of her marriage with defendant in 1881.

The Judge: Then the defendant is held out to the world as the owner of the shop, and when a debt is contracted it is found that the wife owns everything.

Defendant said, in reply to the Judge, that he had one child. He was not prepared to offer anything in payment for the goods, as he had not ordered them.

Mr. Myers: But according to his statement he is in very comfortable circumstances, and therefore should pay.

The Judge: In the same year that he got married he settled everything upon his wife, and made himself a beggar. He has not, according to this, a penny of his own money.

Mr. Myers: This is a matter of importance to people who may give him credit.

The Judge: I cannot alter the legal effect of this document.

Mr. Myers: I don't see by this that he is to be exonerated from his debts.

The Judge: But you have not shown him to have any independent means, and I see no power of the trustees to advance him any money.

Mr. Myers: But is this man to be allowed to occupy a house and contract debts and not pay them?

The Judge: He is entitled to occupy any house so long as he is allowed by the owner to stop there; but it ought to be known in the neighbourhood that although he appears to be carrying on business, it is in reality his wife's. I have only power to put a man in prison if he has means to pay and won't pay; but when a man marries, and as the price of that marriage conveys away the whole of his property, I cannot help as to his debts. The defendant said he proposed to give the goods back. The Judge: I'll adjourn this case generally, and if you find at any time the defendant has private means you can come again. But I completely agree with you that matters of this kind ought to be publicly registered.

THE SALE OF FOOD AND DRUGS ACT.—QUESTION AS TO COSTS.

AN adjourned case of considerable interest came before the Alfreton justices on the 1st inst., the defendant, John Hall, of Somercotes, being summoned at the instance of Colonel Shortt, inspector of weights and measures, for having sold a shillingsworth of sweet spirits of nitre which was alleged to be destitute of nitrous ether, and nearly valueless as a remedy, and was not of the nature, substance, and quality of the article demanded.

At the first hearing of the case, Colonel Shortt produced a certificate of analysis from the county analyst, Mr. A. H. Allen, of Sheffield, to the effect that the article in question was destitute of the real nitrous ether. Mr. W. Fletcher, wholesale chemist, Ilkeston, who supplied the defendant Hall with the nitre, said that he had submitted a sample of the same to Dr. Truman, of Nottingham, who stated that it was not destitute of nitrous ether, but that it had deteriorated, and that the deficiency could be accounted for by the fact that the sealed sample consisted of 1 oz. of sweet spirit of nitre in a 10-oz. bottle, and that it had been supplied in the middle of June. Upon the application of Mr. Fletcher, the Bench allowed the case to be adjourned, that a sample for analysis might be forwarded to Somerset House.

At the adjourned hearing, Mr. Henry Glaisyer, of the firm of Glaisyer & Porter, Birmingham, appeared for the defendant; but Colonel Shortt, immediately upon the case being called, intimated to the Bench that he should, in face of the report received from Somerset House upon the sample sent for analysis, withdraw from the prosecution. Mr. Glaisyer, on behalf of the defendant, applied for costs, explaining that that was the first opportunity he or his client had had of knowing the contents of the report from Somerset House, owing to an irregularity on the part of the inspector of weights and measures, who sent the sealed sample for analysis to Somerset House, instead of allowing it to be sent by the magistrate's clerk. The magistrates refused to allow costs, and upon Mr. Glaisyer asking upon what principle of equity the refusal was based, the chairman said that Colonel Shortt had withdrawn from the case, the Bench refused to allow costs, and there was an end of the matter. Mr. Glaisyer pressed the Bench to express some opinion with

regard to the defendant. He thought the defendant should go from that court without any reflection upon his character as a retailer of drugs. The chairman repeated that Colonel Shortt, the inspector, had withdrawn from the case, and that might be taken as equivalent to saying that the defendant had sold a pure article.

Miscellaneous Formulae.

FLY-PAPER.—H. Böhner, of Kitzingen, in the *Pharm Zeit.*, gives the following:—Lign. quassiae, 200 grammes fruct. colocynth, 25 grammes; piper. long., 40 grammes. Boil in sufficient water to yield 600 grammes of strained liquid, and add syrup, 50 grammes. Soak the paper in the liquid, and dry as quickly as possible to prevent it from turning sour.

CEMENT FOR PORCELAIN.—Four parts of alabaster gypsum are mixed with 1 part of powdered gum arabic, and the mixture rubbed up to a thin paste with a saturated solution of boracic acid prepared in the cold.

PERFUMES FOR TOILET SOAPS.—*Pine Soap.*—Oil of pine, 140; oil of juniper, 20; oil of lavender, 10; oil of thuya, 10.

Herbaceous Soap.—Oil of lavender, 140; oil of rosemary, 40; oil of thyme, 25; angelica oil, 5; oil of cloves, 50; oil of cassia, 50; French oil of wormwood, 25.

Violet Soap.—Oil of cassia, 25; oil of cloves, 25; geranium oil (Spanish rosé), 50; oil of lavender (Mont Blanc), 25; Sassafras wood oil, 25; tincture of orris root, 100; iris oil, 1.

Rose Soap.—Geranium oil (Spanish rosé), 100; otto of roses (Turkish), 10; Turkish geranium oil, 100; rosewood oil, 50.

Fancy Soap.—Oil of sweet oranges, 60; Turkish palma rose oil, 150; oil of lemon, 100; oil of lavender, 250; oil of bergamot, 500; oil of lemon grass, 50; mirbane oil, 25; oil of cassia, 100; oil of cloves, 50; tincture of orris root, 25; musk, 15.

LIQUID PASTE.—According to *Polytechnisches Notizblatt*, a paste which is liquid, does not mould, and dries on paper to a shining crust, which renders it available for postage stamps and the like, is thus prepared:—

100 parts of potato starch are treated with 120 g. of water and 5 g. of pure hydrochloric acid in a porcelain vessel; the mixture left to stand for forty-eight hours in a warm place, and then boiled until the entire mass has become viscid and clear, whereupon it is mixed with a solution previously prepared, consisting of 100 g. of gum arabic and 20 g. of sugar, boiled up with 100 c.c. of water acidulated with 1 g. of nitric acid.

CEMENT FOR CAOUTCHOUC.*—Powdered shellac is mixed with ten times its weight of strong ammonia and forms a transparent jelly, which may be liquefied by placing the vessel containing it in hot water. This cement serves for uniting pieces of caoutchouc together, or for fastening caoutchouc on glass or any other smooth surface.

SYRUP OF YERBA SANTA.—The Detroit physicians frequently prescribe syrup of yerba santa as a vehicle for quinine, and at the request of the pharmacists of that city they have adopted the following formula:—

	Parts				
Strong water of ammonia	—	—	—	—	4
Fl. ext. yerba santa	—	—	—	—	100
Syrup	100

Ammonia is employed to bring the resinous acid of the yerba santa into a soluble condition.

Medical Gleanings.

HYDROBROMIC ACID must be used in much larger doses than has been customary if any benefit is to be derived from it. Such is the opinion of Dr. H. C. Wood (*Med. News*, February 23), who has been using this drug recently in epileptic cases. He found in three instances that $\frac{1}{2}$ -oz. doses of the officinal hydrobromic acid was much more effectual than equivalent doses of bromide of sodium or potassium, and not nearly so liable to produce symptoms of bromism. He gives the acid after meals, with syrup, and diluted with half a pint of water.

SIZYGIUM.—The fruit of *Szygium jambolanum*, an East Indian plant belonging to the natural order Myrtaceae, has recently been somewhat in demand on the Continent for use in the treatment of diabetes. M. Banatrala has found in three cases in which he has tried it that its use led to a diminution in the amount of urine secreted, and that it caused the disappearance of the sugar. These results were manifested in forty-eight hours after taking the medicine. During the time that the patients were submitted to the action of the drug they could take anylaceous food with impunity. The astringent rind of the fruit seems to be the active part.—*Lancet*.

NEW REMEDIES.—The *Midland Medical Miscellany* contains notes on the following:—

Geffroya inermis.—Known in the West Indies as bastard cabbage bark. In Jamaica it has long been esteemed as a reliable vermicifer, and was officinal in the Edinburgh Pharmacopœia during the last century. The bark, which is the part used, is met with in commerce in the form of quills about 1 to 2 inches in diameter and $\frac{1}{2}$ of an inch thick; the outer surface is pale brownish-grey, and much cracked longitudinally. The taste is sweetish and mucilaginous. The drug is preferably administered in the form of a decoction, prepared by boiling 10 oz. of the bark in 2 pints of water, until the liquid is of a sherry colour. Dose—2 to 4 tablespoonfuls for three mornings, followed by a dose of castor oil, and less in proportion for children. It is safest to begin with a small dose, increasing it until nausea is produced, which indicates the limit of the dose for that individual. The tincture is prepared from $2\frac{1}{2}$ oz. of the bark to 1 pint of proof spirit. The dose is 30 drops three times a day.

Goania Domingensis L..—The root of this plant has recently been introduced by one of the leading dentists of London for use as a dentifrice and mouth lotion. In the West Indies it has long been used, both as a bitter tonic and stomachic, and the stems as a simple form of toothbrush. In commerce it is met with in the form of cylindrical pieces, $\frac{1}{2}$ to $\frac{3}{4}$ inch thick, and about 12 inches long. The closely-adherent bark is of a greyish-brown colour, and about $\frac{1}{25}$ of an inch thick. The wood is white, tough, and fibrous, and easily frayed out. The taste is slightly bitter, aromatic, and mucilaginous. The plant which yields the stem is a climbing shrub, belonging to the natural order Rhamnaceæ. It has alternate elliptical serrate leaves and flowers in clusters, along leafless branches. The fruit is a small three-winged capsule, the wings being twice as broad as the cell.

Therapeutical Uses.—Dr. J. Macfayden, speaking of the gouania, or chewstick, as it is more commonly called, says that it is used as a substitute for hops in the cooling drinks of the country. The infusion has been employed in gonorrhœa and dropsy, and as a light grateful bitter, in cases of debility, to restore the tone of the stomach. As a dentifrice it produces a healthy state of the gums. A tincture, prepared from it and diluted with water, is much recommended as a wash or gargle in cases of salivation or diseases of the gums. It excites the salivary glands, producing profuse expectoration of saliva, and would probably prove a good stimulating expectorant in pulmonary complaints. It has been recommended also as a means of emulsifying cod-liver oil, as it covers the taste to a certain degree, and probably renders it more easily assimilated. It has been used also as a means of breaking-off the habit of chewing tobacco.

Preparations and Doses.—Of the fluid extract the dose is 3 ss. to 3 j. The tincture is prepared from 4 oz. of the bark to Oj. of the proof spirit, and the dose is 3 ss. to 3 ij.

Foreign and Colonial.

FORMATION OF A PHARMACEUTICAL SOCIETY IN THE TYROL.—The first pharmaceutical society in the Tyrol, which has received the name "Societa farmaceuta Trentina," was founded in Trentino, in Italian Tyrol, on May 1 of this year. The name of the president is Signor Carlo Giupponi.

THE CHOLERA AT TOULON.—Among the victims of the cholera at Toulon one of the most noted was a pharmacien, M. Alezard, a prominent citizen, a municipal councillor, president of the Mediterranean Club, and a brave man. In his official capacity he laboured unceasingly in the combat with the scourge, and died a martyr to duty.

A PATENT MEDICINE BUSINESS.—The editor of the New York *Pharm. Record* narrates some few things "what we saw in Lowell," at the establishment of J. C. Ayer & Co., great patent medicine makers. The advertising accounts occupy seven or eight persons; the firm work, on their own account, eight printing presses, which, among other business, have to turn out about thirteen millions of almanacs a year. These are printed in English, French, German, Spanish, Portuguese, Norwegian, Swedish, Dutch, Welsh, and Bohemian. In another department he saw 20 bushels of pills, and was assured that the firm turn out 15 tons each year.

POISONING BY YELLOW JASMIN.—The *Canadian Pharmaceutical Journal* reports a singular case of poisoning which, at the date of publication, was still before the courts. On June 3 Mrs. Frankish, a married lady residing in Toronto, sent her son to the drug-store of Mr. W. Gaynor for a package of rue. He was served by the apprentice, George Cliff, who gave him instead a package of yellow jasmin, saying that it was the same thing under a different name. In course of time an infusion was prepared by Mrs. Frankish's husband, and the lady took some of it, death resulting in about twenty minutes. A post-mortem and inquest were held, and the jury, after hearing the evidence, returned a verdict to the effect "that Mrs. Frankish came to her death by partaking of an infusion of yellow jasmin purchased instead of rue at Gaynor's drug-store, and we are of opinion that George Cliff did not exercise due caution in the discharge of his duty." Cliff was then discharged and immediately re-arrested, and arraigned before Mr. J. M. Wingfield, J.P., on the charge of manslaughter. He pleaded not guilty, and several witnesses who gave evidence at the coroner's inquest were examined. The magistrate held that a *prima facie* case had been made out, and committed the prisoner to the assizes. He was afterwards released on his own bail in \$1,000 and two sureties in \$500 each, one of the sureties being his father, who is a carpenter residing in Cooksville.

THE NEW YORK STATE PHARMACY LAW lately passed provides that the State Pharmaceutical Association shall nominate ten persons, from whom the Governor shall select five, to form a Board of Pharmacy. These are to retire, one by one, annually, and to be replaced by a similar process of nomination and selection. The Board thus constituted is to grant licences first to all persons actually carrying on business, to assistants who have been engaged at the business for a period of five years or upwards, if over twenty-one years of age, to all persons diplomaed by any incorporated college of the State, and to persons whom they shall themselves examine or cause to be examined. A fee of \$5 is to be paid by every licensee. The Act does not apply to the business of medical practitioners, wholesale dealers, or patent or proprietary medicine makers or vendors; "nor to the sale of the usual domestic remedies by retail dealers in the rural districts. And nothing in this Act shall be so construed as to prohibit the employment in any pharmacy of apprentices or assistants for the purpose of being instructed in the practice of pharmacy, but such apprentices or assistants shall not be permitted to prepare and dispense physicians' prescriptions, or to sell or furnish medicines or poisons, except in the presence of, and under the personal supervision of, a licensed pharmacist."

The persons appointed under this law as the first Board of Pharmacy are:—Dr. Alfred B. Huested, Albany; Messrs. Edward S. Dawson, jun., Syracuse; Hiram S. Haskin, Ithaca; J. Hungerford Smith, Ausable Forks; and Clark Z. Otis, Binghamton.

Suggestions.

IODOFORM ANTIDOTE.—As an antidote to iodoform the *Leitmeritzer Rundschau* recommends a 5 or 10 per cent. aqueous solution of bicarbonate of potash.

OXIDE OF MANGANESE.—This is far better, as a material, than oxide of lead or litharge to add to oils to increase their drying qualities, and it is said that this is now the general practice of manufacturers.—*Pharm. Record.*

TO MASK THE ODOUR OF CHLOROFORM.—Nussbaum, in the *Deutsche Medicinische Zeitung*, recommends the addition of 10 to 12 drops of oil of cloves to the sponge in the chloroform-inhaler.

A BANE FOR BUGS AND FLIES.—The *Pharm. Zeitsch. f. Russ.*, quoting from an agricultural journal, says:—Bugs and flies can be driven away by painting the bedstead and walls with a boiling solution of alum. Alum in the lime used for whitening the walls and ceilings is said to keep flies away.

PAINTING WITH METALLIC TIN.—According to the *Baden Gewerbe Zeitung*, Neujean and Delaite, of Liège, use finely-divided metallic tin as a paint for iron. The proportions are:—Metallic tin, 8 kilos.; siccative, 2 kilos., and oil 7 litres.

A STUFFING FOR COFFINS.—To prevent rapid decomposition of corpses the *Deutsche Medicinische Zeitung (Pharmaceutische Centralhalle)*, July 17, 1884, suggests washing them with a 1-per-cent. solution of corrosive sublimate, and fitting up the interior of the coffins with wood-wool saturated with the same preservation.

THE COMPATIBILITY OF SULPHATE OF QUININE WITH IODIDE OF POTASSIUM.—Dr. R. J. Hamill, writing to the *Brit. Med. Journ.*, points out that these two important drugs can be neatly and efficiently combined in the same mixture by taking advantage of the solubility of the sulphate of quinine in glycerine. During the last few years he has often prescribed this combination, and has never yet heard of any unpleasant symptoms resulting from its use.

A USEFUL ADHESIVE MIXTURE FOR LABELS.—When bottles with ordinary labels are allowed to stand in a damp place, as a rule the labels turn mouldy and fall off. Labels which neither turn mouldy nor fall off may be made, says the *Leitmeritzer Rundschau*, thus:—A paste is made in the usual way, using, however, water containing 2 g. of boracic acid per litre. This paste is then mixed with one-third of its volume of liquid glue, prepared by allowing ordinary glue to swell up in water for about twelve hours, melting the gelatinous mass at a gentle heat, and mixing it with a quantity of strong vinegar, sufficient to keep it liquid at the ordinary temperature.

TO COLOUR BILLIARD-BALLS RED AND SCARLET.—The *Pharm. Zeitung* gives the following processes:—

(1.) The ball is thoroughly immersed in as much water as will cover it, to which 10 drops of hydrochloric acid have been previously added. It is then washed, and placed for a minute in a hot solution of cochineal prepared by boiling together 5 g. of powdered cochineal, 500 cc. of water, and 5 g. of stannous chloride in a copper pan. The ball is then well washed and dried, and, if not sufficiently coloured, again immersed in the dye.

(2.) The ball to be dyed is immersed for ten to twenty minutes in dilute nitric acid (1 : 32), washed, and placed for an equal length of time in a solution of stannous chloride (1 : 200), and finally boiled in a solution of carmine (1 : 200) to which a little ammonia has been added.

The addition of a small quantity of tartaric acid towards the end of the operation produces a scarlet colour.

On cooling, the ball is rubbed with a small quantity of linseed oil.

SUPPOSITORIES.—Mr. Rother, in Stearn's "New Idea," remarks that the demand for suppositories is rapidly diminishing, and he also congratulates the trade on the fact that the fabrication of these is passing into the hands of special operators. But he notes improved methods of making them by hand. Numerous difficulties are encountered in the pre-

paration of mould-made suppositories containing soft materials immiscible with fats. Some refractory substances, such as solid extracts, are occasionally dried with a view to suit their better application. These devices answer very well excepting where the heat of the molten fat softens and agglutinates the previously dry and pulverulent bodies. All suggestions to moderate the temperature of the mixture, to liquefy the extracts, to pour the mixture not until it begins to set, etc., produce but indifferent and most generally precarious results. In the *Pharmacist* for October, 1872, the writer proposed a plan of procedure which has demonstrated its efficiency. This method consists in adding some inert dry powder, such as talc, chalk, starch, etc., in sufficient amount to suspend and disseminate the moist substances in the fused excipient.

More recently the process of making suppositories without the use of moulds came into notice. A few manipulators more adept than the generality succeed in shaping very acceptable products in this manner. Although the average operator cannot compare his handiwork with that of the mould process in outward appearance, nevertheless the hand-made article presents various other advantages favourable to the extension of this method. The greatest obstacle to the manipulation and the elegance of the product is the lack of plasticity and adhesiveness, and the too ready fusibility of the cacao fat. A very decided improvement resulted from the proposal to add castor oil to the cacao fat, in the proportion of one-sixth. This adjunct produces a pliant mass, much less easily melted by the warmth of the fingers than the unmixed fat. But Mr. Rother himself prefers, for various reasons, the ratio of one-eighth or less, in which proportion it reduces the cacao fat to such a degree of pliancy as generally characterises an admirable pill-mass. The cacao fat thus prepared is easily and rapidly rolled out on any smooth surface, sprinkled with powdered starch, either with the hand or by means of a spatula. It may then be cut on a pill-machine, or with a spatula on a graduated tile. The resulting segments are then again shaped by the fingers or the spatula. The cacao fat, previously powdered or grated, is incorporated with the lard and the medicaments by trituration in a mortar. The starch or some other dusting powder is an indispensable adjunct to the succeeding manipulations.

Personalities.

ON July 31, the stock-in-trade, drugs, and chemicals of Mr. T. Johns, chemist, 8 Cumberland Street, Devonport, were sold by auction. Mr. Johns is retiring from business.

THE will (dated December 14, 1883) of Peter Squire, late of 12 York Gate, Regent's Park, who died on April 6, has been proved, the gross amount of personality being £29,101. 16s. 7d. The leases of the houses at York Gate and 411 and 413 Oxford Street, the farm at Basmead, Beds, and all other properties, are divided between the widow, daughter, and four sons of the deceased, with the exception of £100. left to an old servant.

AMONGST the candidates who presented themselves for examination for the L.D.S. diploma in dental surgery at the Royal College of Surgeons, Dublin, on May 26 and 27, and passed, were the following gentlemen, students of the National Dental Hospital, Great Portland Street:—Mr. E. C. Perks, chemist, 1 Sloane Square; Mr. R. Gleave Hulme, pharmacist, Ebury Street, Pimlico; and Mr. Arthur Stooke, chemist, King Street, Milton, next Sittingbourne, Kent.

THE *Weekly Drug News*, of New York, reports that a young drug-clerk, named Robert Bright, recently arrived from London, had attempted suicide by taking laudanum obtained from a drug-store in Brooklyn, on a prescription written by himself. Mr. Bentley, who supplied the laudanum, saw him swallow the dose, seized the young man, and, with the assistance of a policeman, forced him to take an emetic, which saved his life. In the police court Bright said: "I was a fool; but the whole amount of the business was that I lost all my money, and while despondent I thought of suicide." Decision in the case was reserved.

Obituary.

GREENISH.—On July 16, at 20 New Street, Dorset Square, very suddenly, Emily, the beloved wife of Thomas Greenish, aged 65.

HUDSON.—Mr. Robert Spear Hudson, of Bache Hall, Chester, died suddenly at Scarborough. He was the proprietor of Hudson's washing powder. For more than thirty years he was in business as a chemist at West Bromwich. When he desired to devote all his time to the washing-powder he took as partner Mr. Pershouse. The business was afterwards sold to Mr. Laugher, who had been apprentice and afterwards assistant there, and a few years ago it came under Mr. Brett's hammer and was broken up. Mr. Hudson was a Congregationalist, and was very liberal in all good works. He recently gave £1,000*l.* towards the North Wales College Fund, and £1,000*l.* to the Jubilee Fund of the Congregational Union.

LEATH.—The homœopathic journals record the death of Mr. James Leath, senior partner in the firm of Leath & Ross, the well-known chemists and publishers of Vere Street, Oxford Street, and St. Paul's Churchyard, which occurred on July 7. Mr. Leath was at first a bookseller, having succeeded to a business in St. Paul's Churchyard in 1836. A few years later, his interest in Homœopathy having been aroused, he added to his book business an agency for the sale of homœopathic medicines, and he also published many of the most popular specimens of homœopathic literature. In 1850 he engaged the services of Mr. Woolcott—now of Leamington—as a homœopathic pharmacist, and opened the pharmacy at the West End. Mr. Woolcott attended to the preparation of the medicines, while Mr. Leath looked after the publishing business. In 1854 Mr. Ross, who entered into partnership with him three years later, took charge of the pharmacy at the West End, and superintended all the pharmaceutical operations. While actively engaged in publishing homœopathic literature, his efforts to spread a knowledge of homœopathy were not limited to business, but wherever the opportunity presented itself, let it come in what shape it might, he was ever ready to press forward a sense of its value and a knowledge of its principles. The *Homœopathic Review* speaks of Mr. Leath as a thorough man of business, shrewd and keen, equally generous and kind-hearted, and one who will long be remembered by a considerable circle of attached friends. The business of the firm will be carried on both departments by his energetic partner Mr. Ross.

SIR ERASmus WILSON died on the 8th inst., in the 75th year of his age, at his residence at Westgate-on-the-Sea. This eminent surgeon had retired from practice for some years, after winning the highest respect from his professional brethren and from an immense circle of patients. In his early days he made the study of skin diseases his specialty, and it was his fame as "the skin doctor" that had the greatest influence with other medical practitioners, in inducing so many of them to select particular lines of practice. His profession and his books brought him great wealth, which he spent in a princely manner. The 10,000*l.* which he spent in bringing the "Cleopatra" obelisk to England was the most prominent exhibition of his liberality, but his purse was always open to religious and philanthropic claims, and it is said that privately his benevolence was so great that "the visible results of his charity did not amount to a tithe of the good which he did secretly." His treatment of his patients was characterised not only by original prescriptions, but also by vigorous dietetic and hygienic regimen for the rich; while often, it is said, for the scrofula of the poor his formula was, "Some the enclosed pound, and call for another dose every week until well." Sir Erasmus Wilson founded, at his own expense, the chair and museum of dermatology in the College of Surgeons, and was elected the first professor. He also instituted the chair of pathology in the University of Aberdeen. He was President of the College of Surgeons in 1881.

MARRIAGE.

STEPHENS—SCOTT.—On July 28, at Belmont Wesleyan Chapel, Stoke, by the Rev. William Ludlow, J. Stephens, chemist, of Devonport, to Sophie, eldest daughter of Mr. W. Scott, R.N.

Trade Notes.

MESSRS. C. J. HEWLETT & SON, wholesale druggists, Charlotte Street, E.C., have been awarded a gold medal for their pharmaceutical preparations exhibited at the International Exhibition at the Crystal Palace.

* *

MESSRS. CADBURY BROTHERS, of Birmingham, have introduced a new article called ginger chocolate. It is in appearance and shape like a chocolate cream, only instead of the cream there is a piece of preserved ginger.

* *

THE Chemists' Aerated and Mineral Waters Association (Limited) have purchased extensive premises at Starbeck, next Harrogate, for the convenience of their growing trade in the North of England, and they have also purchased the Sun Factory, at Bristol, in order to meet the requirements of their West of England shareholders.

* *

ON Saturday, August 2, the employés of Messrs. May & Baker, Battersea, went for their annual excursion—this year to Ramsgate. It has been the custom of this firm to grant a holiday including the Saturday and the subsequent Bank holiday, of which many of the men fully avail themselves, in some cases with their wives and children. This is an example which might be followed with good results.

* *

THE operations of the Sanitas Company for the past half-year have resulted in a large increase of profit as compared with the corresponding period of last year; and the directors have, in consequence, declared an interim dividend for the half-year ended June 30 last at the rate of 10 per cent. per annum, payable now. The directors add that the business of the company is increasing satisfactorily.

* *

THE "HARDEN HAND-GRENADE" FIRE-EXTINGUISHER.—On July 24 a series of experiments in fire-extinguishing were performed in a plot of vacant ground near Farringdon Street before a number of gentlemen connected with the press. The apparatus used was the "Harden Hand-grenade" fire-extinguisher, patented in the United States early in 1883, and more recently in this country. It is an ornamental globular flask, holding about a pint of fluid, with a peculiar recessed stopper, which forms part of the invention. It is proposed to keep one of these grenades in each room or corridor of the house. If a fire occurs the grenade is at once to be broken at the base of the flames. A second may be used if necessary, which is not often the case. The liquid yields a certain amount of carbonic acid gas. The experiments performed were very successful. A screen of wood lightly smeared with tar was splashed with paraffin, and a fire lighted close to it. It soon flamed fiercely, when the experimenter, taking a grenade in each hand, broke one against the other. Immediately the flames quailed, and in a very few seconds entirely disappeared. A wooden shoot, 14 feet high and about 1 foot square, smeared inside with tar, was made to represent a chimney. Wood and paper soaked with paraffin were lighted in it, and in a few seconds the flames were roaring out at the top. One grenade broken at the bottom immediately checked their fury, and it was curious to note the gradual extinction of the flames in the upper part of the shoot, where the fire had caught the tared wood. These grenades are intended only to extinguish incipient fires. They are handy, easily used by a child, cannot be used for any other purpose, and so are not likely to be removed from their places, and need no replenishing. A pamphlet published by the company shows that they are already used in America by a number of the leading druggists, as McKesson & Robbins and Tarrant & Co., New York; Richardson & Co., St. Louis; Parke, Davis & Co. and Stearns & Co., Detroit. They certainly seem worth attention. One remarkable testimonial is from the President of a Board of Underwriters, stating that a rebate of 15*c.* per \$100 had been allowed on the insurance policy of a paper company because the grenades were in use there. Messrs. G. H. Gardner & Co., of Southwark Bridge Road, S.E., are the agents.



The following list has been compiled expressly for THE CHEMIST AND DRUGGIST by G. F. Redfern, Patent Agent, 4 South Street, Finsbury, London, and at Paris and Brussels.]

Applications for Letters Patent :-

Sulphate of Ammonia.—8680.—June 6, 1884.—R. R. Kelly and A. C. L. Weigel, of Southampton Buildings, London. Manufacture of sulphate of ammonia and by-products resulting from the process.

Sulphuric Acid.—8803.—June 10, 1884.—P. Jensen.—A communication from A. Kux, of Berlin. Improvements in apparatus for concentrating sulphuric acid.

Sulphuric Acid.—9317.—June 23, 1884.—W. Spence.—A communication from J. J. Thyss, of Bakou, Caucasus, Russia. Improvements in apparatus for the production of sulphuric acid.

Sulphuric Acid.—9362.—June 24, 1884.—A. J. Boult.—A communication from M. Willett, of Newport, Rhode Island, United States. Apparatus for concentrating sulphuric acid.

Sulphide of Soda.—9458.—June 26, 1884.—E. Carey and H. Gaskell.—A communication from T. Hurter, of Paris. Improvements in the manufacture of sulphite of soda.

Treating Phosphates of Lime, &c.—8662.—June 6, 1884.—P. De Wilde, of Brussels. A process for a new mode of treatment of phosphates of lime mixed with carbonate of lime.

Treating Oils.—9510.—June 27, 1884.—C. E. Bell, of Durham. Improvements in the treatment of oils and tars obtained from coke ovens.

Trusses.—8923.—June 13, 1884.—W. Pearce, of Cardiff. Improvements in trusses.

Truss Pads.—8945.—June 13, 1884.—J. Arnold, of West Smithfield, London. Improvements in truss pads.

Vaginal Appliances.—8971.—June 14, 1884.—H. S. Reynolds, of Southampton Buildings, London. An improved vaginal appliance specially applicable in malformation of the pelvis.

Washing-liquor.—9427.—June 26, 1884.—J. J. Fanning, of Manchester. An improved washing or cleansing liquor or solution.

Wicker Hampers.—9254.—June 21, 1884.—C. J. Schofield, of Clayton, near Manchester. Improvements in or applicable to wicker hampers for carboys and other purposes.

Wiring Corks.—9297.—June 23, 1884.—H. J. Allison.—A communication from O. C. Carpenter, of Brooklyn, New York, United States. A machine for wiring corks in bottles.

Ammonia.—9655.—July 1, 1884.—A. Bru, of Paris. Improvements in the process and apparatus for the production or manufacture of ammonia or ammoniacal products.

Ammonia.—10,448.—July 22, 1884.—R. Main, of Ardeer, and W. Galbraith, of Glengarnock, both in Ayrshire. Improvements in the process of obtaining ammonia or like products from the gases evolved from blast-furnaces, or from the gases produced from the destructive distillation of coal, shale, or other carbonaceous substances, and in the means employed therefor.

Beverage.—10,265.—July 17, 1884.—E. H. Wagner, of Copenhagen. The production of an improved beverage or beer suitable for a temperance drink.

Beverage.—10,387.—July 21, 1884.—E. J. Pond, of New Road, Clapham, London. Restorative and medicinal beverage—zythum, or life sustainer.

Beverage.—10,599.—July 25, 1884.—A. Andrews, of St. Helen's Place, London. A new aerated beverage.

Bottles, &c.—10,419.—July 21, 1884.—H. Codd, of Gracechurch Street, London. Improvements in the manufacture of bottles, and in tools to be used in forming the same.

Bottle, &c.—10,663.—July 28, 1884.—H. Agar, of Worcester Park, London. A new form of bottle and stopper.

Carbonate of Strontium.—9644.—July 1, 1884.—S. Pitt.—A communication from E. A. Mebus and J. W. de Castro, both of New York. Improvements in the manufacture of carbonate of strontium from sulphate of strontium.

Carbonate of Soda.—10,651.—July 28, 1884.—J. Maclear, of Glasgow. Improvements in making granulated crystalline carbonate of soda, and in apparatus therefor.

Cauterising-apparatus.—10,548.—July 24, 1884.—J. H. Johnson.—A communication from C. A. Paquin and L. de Place, both of Paris. Improvements in cauterising-apparatus.

Chlorine, &c.—9,688.—July 2, 1884.—W. Weldon.—A communication from M. M. Pecheiney & Co., of Saintes, France. Improvements in the manufacture of chlorine and hydrochloric acid from chloride of magnesium.

Corks.—10,034.—July 11, 1884.—G. Hurdle, of Southampton. Dispensing with the use of corks for stopping bottles and the like.

Decarbonating Carbonate of Strontia.—9,765.—July 4, 1884.—J. Imray.—A communication from H. Leplay, of Paris. Improvements in decarbonating carbonate of strontia, and in apparatus therefor.

Deodorising Material.—10,648.—July 26, 1884.—J. C. Stephenson, of Portsmouth. Improvements in the preparation of a material for deodorising purposes, and for use in the purification of oil, syrups and other liquids.

Disinfecting.—9,781.—July 5, 1884.—W. Fearnside, of Liverpool, and R. Baynes, of Liscard, Cheshire. Automatic disinfecting and deodorising process, and the apparatus therefor.

Disinfectants.—10,015.—July 10, 1884.—H. B. Condy, of Battersea, London. Improvements in the manufacture of disinfectants.

Disinfecting Night-light.—9,722.—July 3, 1884.—G. Brownen, of Upper Tooting, London, and J. I. Eden, of Westminster. A disinfectant night-light or candle.

Feeding-bottles.—10,884.—July 21, 1884.—W. H. Baines, of Sheffield. Improvements in feeding-bottles.

Feeding-bottles.—10,531.—July 24, 1884.—F. J. Harrison, of Notting Hill, London. An improvement in or connected with feeding-bottles.

Feeding-bottles.—10,542.—July 24, 1884.—T. Pearse, of Osulston Street, London. Improvements in or applicable to feeding-bottles.

Filters.—10,814.—July 31, 1884.—D. Clerk, of Glasgow. Improvements in filters.

Furnaces.—10,812.—July 31, 1884.—J. Maclear, of Glasgow. Improvements in furnaces for chemical processes.

Hair-brushes.—10,298.—July 18, 1884.—W. S. Frost, of Peckham, J. L. Merigot and G. C. C. Fein, both of Conduit Street, all in London. Improvements in medical electric hair-brushes and apparatus.

Hydrate of Strontia.—10,138.—July 14, 1884.—C. M. Pielsticker, of Lombard Street, London. An improved process for the manufacture of hydrate of strontia from sulphate of strontia.

Hollow - stoppered Suppositories.—9628.—July 1, 1884.—E. H. Gibbs, of New York. Improvements in hollow-stoppered suppositories.

Inhaling Medicated Vapour.—10,500.—July 23, 1884.—C. B. Harwood, of Holborn Viaduct, London. Improved apparatus for facilitating the inhalation of medicated vapour.

Levulose.—10,686.—July 28, 1884.—A. M. Clark.—A communication from E. L. J. Boniface, of Paris. An improved method of converting the juice of the Jerusalem artichoke into levulose, and the applications of the latter for obtaining various products by fermentation and distillation.

Manganese Oxide.—10,813.—July 31, 1884.—J. Maclear, of Glasgow. Improved process for obtaining or recovering manganese oxide from manganese sulphate produced in obtaining chlorine.

Mixing Carbonic Acid with Liquors.—10,437.—July 22, 1884.—L. A. Groth.—A communication from E. Luhmann, of Rogasen, Germany. A new or improved apparatus for injecting and mixing fluid carbonic acid in small regulated quantities with beer and sparkling liquors.

Medical Compound.—10,523.—July 24, 1884.—E. W. R. Schröder, of Hamburg, Germany. A new medical compound, and the process of manufacturing the same.

Opening Bottles.—10,470.—July 23, 1884.—R. Rayner, of Ashton-under-Lyne, Lancashire. Improved apparatus for opening internal-stoppered bottles containing aerated waters.

Phosphate of Alumina.—10,267.—July 17, 1884.—W. A. Hills, of Saltney, Flintshire. Improvements in the manufacture of precipitated phosphate of alumina, and the mixed precipitates of alumina, and sulphate of lime.

Pill-machine.—10,464.—July 22, 1884.—G. W. Niblett, of Southampton Buildings, London. An improved pill rounding and finishing machine.

Pulmonary Complaints.—10,055.—July 11, 1884.—A. McGuffie, of Glasgow. A new or improved compound for curing phthisis and other pulmonary diseases and chest complaints.

Recovering Sulphur.—9,768.—July 4, 1884.—W. L. Wise.—A communication from H. Grouven, of Dresden, Saxony. Improvements in effecting the recovery of sulphur from soda-waste.

Receptacles for Soaps, &c.—10,589.—July 25, 1884.—G. Martin, of Bradford. Improvements in receptacles for soaps, tooth-paste, vaseline, and other cosmetics.

Salicylic Acid.—10,167.—July 15, 1884.—J. Y. Johnson.—A communication from F. Von Heyden, of Dresden, Saxony. Improvements in the manufacture of salicylic acid, and of the homologues thereof.

Sealing Bottles.—10,224.—July 16, 1884.—H. Délén, of Berlin. Improvements in apparatus for sealing bottles.

Soap.—9,950.—July 9, 1884.—G. H. Goodman, of New Street, Newington, London. Improvements in the manufacture of soap adapted for purifying the skin, or for the teeth; also for scouring purposes, cleaning and polishing plate, metal, iron, steel, &c.

Soap.—10,182.—July 15, 1884.—C. L. Field, of Lambeth, London. An improved manufacture of soap. 5780. A. G. Brookes. Manufacture of lactic acid and the lactates, &c. 4d.

Sodium, Carbonate, &c.—10,080.—July 12, 1884.—W. Robinson, of Gateshead-on-Tyne, Durham. An improved method of making sodium carbonate and certain by-products. 5849. P. M. Justice. Manufacture of alkalies and alkaline salts. 2d.

Spout and Stopper for Bottles, &c.—10,411.—July 21, 1884.—J. Mitchell, of Titchfield Terrace, Regent's Park, London. An improved combined pouring spout and stopper for bottles and other vessels. 5868. W. Weldon. Manufacture of chlorine. 4d.

Stopping Bottles.—Under this head patents were taken in July by:—S. Skerritt, of Sheffield; S. Leoni, of St. Paul's Street, Paddington Street, London; J. H. Teale, of Leeds; A. Muir, of Walbrook, London; T. & J. Brooke, both of Sheffield; D. E. Langham, of Wimbledon, Surrey; J. Pritchett, of Birmingham; B. Harrison, of Oldham; R. A. Green, of Victoria Street, Westminster; J. H. B. Denison, of Kingston-upon-Hull; W. R. Lake, a communication from G. T. Couty, of Paris; C. Ham, of Exeter (a stopper whereby bottles, casks, syphons, jars, and other vessels fitted therewith may be filled with liquid without necessitating removal of the stopper, and whereby the contents may, if desired, be aerated or charged with carbonic acid or other gas after bottling); T. McDonald, of Chapel House Street, Millwall, London.

Supporting Varicose Veins.—10,515—July 23, 1884.—E. Diver, of Kenley, Surrey. Improvements in appliances for the support of varicose veins and other parts of the body.

Surgical Splints.—10,644.—July 26, 1884.—S. Gamgee, of Birmingham. Improved materials for surgical splints.

Washing Bottles.—10,317.—July 18, 1884.—F. Cuntz, of Karlsbad, Bohemia, Austria. Apparatus for washing or rinsing bottles, and other narrow-mouthed vessels.

Specifications published during the month:—

Postage 1d. each extra.

1884.

4968. F. Foster. Machine for filling and syruping internally-stoppered bottles for containing aerated liquids. 6d.

5039. E. Drew. Obtaining volatile hydrocarbon from coal-gas, &c. 2d.

5070. C. F. Claus. Obtaining sulphur from sulphuretted hydrogen. 4d.

5120. F. Wirth. Manufacture of the colouring matter of dye stuff. 2d.

5142. N. A. Hélonius. Manufacturing light essences by the distillation of coal, &c. 4d.

5145. M. Haymann. Bottle-stopper. 2d.

5157. E. Edwards. Fertilising manure. 2d.

5182. W. J. Brewer. Stoppers for bottles, &c. 2d.

5193. A. French. Obtaining compounds of lead for making pigments, &c. 4d.

5310. G. F. Marshall. Filters. 6d.

5326. W. R. Lake. Antiseptic. 4d.

5340. E. S. Wilson. Refining and deodorising oils and fats. 4d.

5343. A. J. Boult. Soap and soap powder. 2d.

5361. W. R. Lake. Manufacture of ammonia and hydrocarbon gases. 8d.

5428. D. Urquhart. Manufacture of sulphuretted hydrogen, &c. 4d.

5441. G. C. and A. G. Thompson. Stoppering and discharging apparatus for bottles. 2d.

5450. J. H. Johnson. Preparation of organic bases suitable for the manufacture of dye stuffs, &c. 4d.

5461. E. Perrins. Unfermented drijks. 2d.

5489. C. A. Faure. Treatment of alkaline salts at high temperature, &c. 6d.

5505. E. Drew. Obtaining volatile hydrocarbons from coal-gas, &c. 2d.

5506. A. C. L. Weigel. Non-alcoholic beverages. 2d.

5515. W. R. Lake. Manufacture of colouring matters. 2d.

5544. A. M. Clark. Manufacture of bicarbonate of soda by means of ammonia, &c. 8d.

5552. H. H. Lake. Syphon-bottle. 4d.

5557. R. Swales and W. P. Cherry. Opening and discharging internally-stoppered bottles containing aerated liquids. 2d.

5582. T. Kemp. Manufacture of salicylic acid. 2d.

5628. J. H. Johnson. Manufacture of salicylic acid, &c. 4d.

5644. C. D. Abel. Manufacture of solid non-deliquescent phosphate of lime soluble in water. 4d.

5445. D. Rylands. Internally stoppered bottles. 6d.

5496. W. Anderson. Purification of water. 6d.

5505. W. Weldon. Manufacture of soda. 4d.

5655. E. Edwards. Abdominal belt. 4d.

5712. E. Carey and F. Hurter. Manufacture of soda and chlorine compounds from sodium chloride. 6d.

5714. A. M. Clark. Electric lighting apparatus for surgical operations, &c. 8d.

5724. P. Coupe and M. Rae. Distillation of coal, shale, &c. 8d.

5732. W. L. Barstow. Water-filters, &c. 6d.

5735. W. A. Barlow. Explosives. 2d.

5761. W. E. Gedge. Production of carbonate of ammonia. 2d.

5767. C. D. Abel. Manufacture, &c., of colouring matters. 4d.

5780. A. G. Brookes. Manufacture of lactic acid and the lactates, &c. 4d.

5849. P. M. Justice. Manufacture of alkalies and alkaline salts. 2d.

5868. W. Weldon. Manufacture of chlorine. 4d.

5954. W. Green. Treatment of mineral oils in combination with other matters, and producing therefrom soap, caudles, &c. 4d.

5958. C. F. Claus. Obtaining from alkali waste either free sulphur or free sulphur and sulphurous acid, or free sulphur and sulphuretted hydrogen. 4d.

5959. C. F. Claus. Obtaining sulphur from sulphuretted hydrogen. 4d.

5960. C. F. Claus. Treatment of mixtures of sulphuretted hydrogen and any other gases to obtain the sulphur of their sulphuretted hydrogen as sulphurous acid. 4d.

5939. R. Baynes, J. Fearnside, jun., and W. P. Thompson. Bleaching of petroleum, &c. 2d.

1884.

4347. J. Leedam. Compound for washing, &c. 2d.

5387. H. G. Hellier. Stoppers for cans and bottles. 6d.

5996. G. C. Andrews and J. E. Sutton. Paints for coating ships' bottoms &c. 2d.

6405. G. Chapman. Separating ammonia from blast-furnace and other gases or vapours. 6d.

6707. E. Perrins. Unfermented drinks. 2d.

7107. J. Inray. Manufacture of soda. 4d.

7110. J. N. Beach. Medicinal and nutritive compounds. 2d.

5244. G. C. and A. G. Thompson. Stoppering of bottles. 6d.

5683. R. Griffiths. Medicinal food for animals. 2d.

6835. J. S. Davison. Stoppers for bottles, &c. 4d.

7247. J. P. Jackson. Filtering water, &c. 4d.

7847. F. W. Renant. Obtaining from alkali waste sulphuretted hydrogen and calcium carbonate. 2d.



PARTNERSHIPS DISSOLVED.

JONES BROTHERS & Co., Milton, oil refiners and manufacturing chemists. June 27. (William Hiram Jones, Ann Jones, William Jones, and John Jones, of Smallthorn, and Enoch Colclough, of Burslem.) As regards Colclough. Debts by remaining partners.

RICHARDSON, J. & H., Nicholas Croft, High Street, Manchester, chemists. June 24. (Joseph Richardson, jun., and Henry Richardson.) Debts by H. Richardson.

WOOD, JACOB, & ROBERT CRICHTON LAYNG, Pavement, Finsbury Square, chemists and druggists. June 30. Debts by Layng.

COMPANY WOUND UP.

PACKHAM & Co. (Limited).—July 12, by Justice Chitty. On pet. of John George Turney, shipping agent, 101 Leadenhall Street. Solicitors—Allen & Edwards, 8 Old Jewry. By order.

DIVIDENDS.

CHARLTON, S. jun., & CHARLTON, J., chemical manufacturers, trading as "Charlton Brothers." First and final div., 3s. 9d., on and after August 11, at offices of trustee—D. Smith, 22 Booth Street, Manchester.

HOLLIS, WILLIAM. Fargate, Sheffield, chemist and druggist. Second and final div. of 4d. on and after July 23, at offices of Camm & Corbridge, accountants, 17 Bank Street, Sheffield.

SHARP, ALFRED JOEL, Spalding, chemist. Div. 1s. 1d. on July 29, at official receiver's office, 5 Petty Cury, Cambridge.

ADJUDICATIONS.

COX, RICHARD COEDEN, 29 Beaconsfield Villas, Preston, late manager to the Sussex Co-operative Drug Company (Limited). August 1. Court—Brighton.

HARRADINE, HENRY GROUND, 65 Load Street, Bewdley, chemist and druggist. July 23. Court—Kidderminster.

MARSHALL ARTHUR WILLIS, 160 Upper Brook Street, Chorlton-on-Medlock, chemist. July 12. Court—Manchester.

COMPOSITIONS.

PARKIN, THOMAS, High Town, Hereford, chemist. Composition of 14s. in one month (secured). Court—Hereford.

WOVENDEEN, HENRY, Springfield Works and 7 School Road, Saltc. trading as "Wovendeen & Co." aerated-water manufacturer and chemist and druggist. Composition of 6s. 8d. by two equal instalments of 3s. 4d. at three and six months (secured). Court—Manchester.

Trade Report.

THE Board of Trade Returns for last month are fairly satisfactory on the whole, the totals of both imports and exports being about the same as those for July, 1883. The imports amounted to 34,203,000*l.*,—a decrease of 117,000*l.*, or $\frac{1}{2}$ per cent.; and the exports to 21,040,000*l.*,—an increase of 222,000*l.*, or 1 per cent. Details affecting drugs and chemicals are given in the table below:—

Imports.

		July, 1882	July, 1883	July, 1884
Picksilver ..	.. lbs., value £	36,900	1,369,935	235,155
" ..	.. cwt.	2,860	100,591	22,408
Alkali ..	.. value £	8,588	9,661	7,682
Chemicals ..	.. value £	11,172	13,493	8,056
Cochineal ..	.. cwt.	154,140	135,516	150,455
" ..	.. value £	823	1,455	1,420
Coal-tar dyes (including alizarine) ..	.. value £	8,368	9,770	8,119
Diodio ..	.. cwt.	35,151	31,563	63,422
Dioscore oil ..	.. value £	491	2,553	3,035
Dioscore oil ..	.. tuns	10,980	52,776	54,091
" ..	.. value £	1,991	3,521	1,649
Empetidine ..	.. cwt.	76,747	134,438	69,884
" ..	.. value £	53,894	45,073	89,258
Bark, Peruvian ..	.. cwt.	98,847	65,060	105,355
" ..	.. value £	16,844	12,743	11,060
Bark, " ..	.. value £	203,179	153,453	97,968
Ham arabic ..	.. cwt.	17,455	3,707	2,482
Drugs, unenumerated ..	.. value £	38,771	7,749	7,961
Drugs, unenumerated ..	.. "	50,939	110,175	68,310

Exports.

		July, 1882	July, 1883	July, 1884
Alkali ..	.. cwt.	567,024	479,995	473,871
Bleaching materials ..	.. value £	179,115	152,423	153,349
Beaching materials ..	.. cwt.	133,700	111,300	126,695
Medicines (comprising drugs and medicinal preparations) ..	.. value £	29,390	36,140	48,942
Other chemicals, exclusive of manures ..	.. value £	83,112	80,312	69,259
Peruvian bark ..	.. cwt.	200,963	171,002	187,623
Foreign chemicals ..	.. value £	6,475	8,254	9,476
Foreign chemicals ..	.. "	67,311	69,477	73,478
Foreign chemicals ..	.. "	16,334	24,702	26,027

MINCING LANE, August 14.

EVENTS have been happening in quick succession of late, so that, although the state of trade might be called dull, there has been plenty in the state of affairs to prevent anyone connected with the drug trade from having nothing to talk about, even though there might be nothing to do.

The Bank holiday, like most Bank holidays, considerably hindered business for several days, and work is only just being recommenced in earnest. The drug sales, being held during the holiday week, went off, as might be expected, with a very dull, not to say flat, tone.

The continuance of cholera abroad and cholera precautions at home have maintained the high prices reached by carbolic acid, bleaching-powder, &c., although speculation in them may be said to have ceased. Unfortunately two large failures in the quinine trade have occurred within the last few days, and the effect of them, both here and on the Continent, will, it is to be feared, be felt by some very considerably.

The Fabbrica Lombarda di Prodotti Chimici, of Milan, was established a few years since for the manufacture principally of sulphate of quinine, and was at one time looked upon as a prosperous concern. Certainly, whatever may have led to its present misfortune, it cannot be said that it lacked energy, for here and in America their representative was well known as a leading genius in connection with quinine movements, especially those relating to the former "combination." Over-production is a term we are accustomed to hear now in reference to almost all trade disasters, and it may be appli-

cable in the present case. Certainly at the time of the establishment of the Fabbrica Lombarda no man in his senses would have thought it possible that the production of cinchona bark could have reached the enormous proportions it has done during the last few years, and we fear it has been *trop de zèle* in manufacturing and trying to place comparatively large quantities of the sulphate upon bad markets which has brought about the present unhappy state of affairs. Consequent, we believe, upon the foregoing, the suspension of the firm of C. G. Meier & Co., of 16 Philpot Lane, has been announced. The firm, established in its present form in 1867, at one time did a considerable South American trade. Cinchona speculations have been of late the principal occupation of the firm, and are supposed to have caused them heavy losses. The capital is stated to have been formerly very considerable, and a few years ago an enormous speculation in quinine brought the firm into notoriety. The meeting of creditors was held on Monday, the 11th instant, but what took place then has not yet been made public.

ACIDS.—A steady trade in *citric* does not, however, advance price above 1s. 5d. to 1s. 5*1/2*d. per lb.; and *tartaric* also moves off freely at slightly better figures of 1s. 6*1/2*d. per lb. foreign, and 1s. 7*1/2*d. to 1s. 7*1/2*d. per lb., English market.

Oxalic remains quiet at 6d. per lb.

ALOES.—All qualities are somewhat cheaper, and in last sales, out of 102 cases Cape offered, 28 sold at 26s. to 44s. per cwt., according to quality.

ALUM, unchanged, at 5*1/2*. 17s. 6d. per ton loose lump, and 6*1/2*. 7s. 6d. for ground in bags.

AMMONIA.—Carbonate continues in poor demand at 5d. to 5*1/2*d. per lb.; but sulphate, having become scarce, price has been advanced to 15*1/2*. 7s. 6d. per ton.

ANTIMONY is slightly easier at 22*1/2*. 10s. per ton. *Regulus*, 44*1/2*. per ton.

ARSENIC in improved demand and firm, at 12s. 9d. per cwt. for powder.

BALSAMS continue very flat. In last sales 23 casks *Capri* were all bought in; of 15 cases *Peru*, 1 sold at 8s. 3d. per lb., rest bought in; and of 15 cases *Tolu* 5 sold at reduced price of 1s. 9d. per lb., remainder bought in.

BARK.—Cinchona qualities are likely to be affected very considerably by the failures here and in Italy, although nothing but time can show to what actual extent. In its natural state the market is in bad enough position, as although the importation of South American bark has somewhat diminished of late, being to date about 1,000 tons less than in corresponding period of last year, yet the same cannot be said of Ceylon, which place had from commencement of present season to July 5 exported 6,998,014 lbs., against 4,884,507 lbs. during corresponding period of last season; and Java far surpasses Ceylon in increase, her exports being now nearly treble what they were a year ago. The sales on Tuesday went off altogether better than was expected, all things considered. Of 1,519 packages South American offered, only 80 bales *Calisaya* quill sold at 9*1/2*d. to 10*1/2*d. per lb.; but of 1,900 packages East India offered, about 1,300 packages Ceylon sold at a general reduction in price of about 2*1/2*d. to 3*1/2*d. per lb.

BLACHING POWDER remains at 9*1/2*. 10s. per ton, although demand has lately become much less.

BORAX in fair demand at 40s. to 42s. per cwt.

CALUMBA ROOT remains in very poor demand at 20s. to 25s. per cwt.

CAMOMILES.—The new crop having come in plentifully, finest new white flowers, for which 84s. was asked a fortnight since, are now to be bought at 46s. to 48s. per cwt.; the quality is very fair. Old flowers, no market.

CAMPHOR.—Both raw and refined qualities have met with extensive business. China and Japan close at about 55s. to 60s. per cwt., but have been to fully 7s. 6d. per cwt. above those prices since our last report. Refined qualities are very firm, foreign makers being like the English ones, fully occupied with their home engagements. English bells, 11*1/2*d. per lb.

CARBOLIC ACID, after the recent "run," has settled down to from 3s. 6d. to 4s. per gallon for liquid pure, other prices in proportion, but speculation in the article seems over.

CARDAMOMS are in fair demand at about unchanged prices. In last Thursday's sales out of 56 packages offered 40 sold, at prices ranging from 5s. to 5s. 11d. per lb. for good bold, and 4s. 1d. to 4s. 6d. per lb. small.

CASSIA LIGNEA in very poor demand at 27s. 6d. per cwt.

CASTOR OIL continues very quiet. In last sales 54 cases K.B. were bought in at 3 $\frac{7}{16}$ d. per lb., and 200 cases seconds at 3 $\frac{1}{16}$ d. per lb.

CHIRETTA.—Forty bales were put up in last sales, but all bought in at 4 $\frac{1}{2}$ d. per lb.

CLOVES have been in better demand since date of our last report, but have gone quiet again, with small sales of Zanzibar quality at 5 $\frac{3}{4}$ d. per lb.

COCHINEAL shows an improved demand; prices range from 10 $\frac{1}{2}$ d. to 1s. 2d. per lb., and 100 bags Teneriffe have lately been sold at full prices.

COD-LIVER OIL continues in very poor demand, and in last sales again the whole quantity offered (Norwegian) was bought in at 5s. 9d. to 7s. per gallon.

CREAM OF TARTAR is in fair demand at 126s. per cwt. for "firsts."

CUBEBS.—Although none were offered in last sales, plenty have arrived of late, and prices remain nominally as last month—i.e., about 9s. 15s. to 12s. 10s. per cwt.

ERGOT OF RYE.—Four barrels good Spanish bought in at last sales, at 10d. per lb.

ESSENCE OF LEMON is in fair consumptive demand, and, but for the large stocks here, higher prices, owing to the present difficulties of import from Sicily, might reasonably be expected. Present quotations, 4s. 6d. to 6s. per lb. here.

GALLS.—Turkey, 40s. to 60s. per cwt.; China, 50s. per cwt.; and Japan, 47s. 6d. to 50s. per cwt. All in limited demand only.

GENTIAN ROOT.—No inquiry; price, 25s. per cwt.

GUM ARABIC.—Although prices are tenaciously adhered to, the position of gum arabic becomes gradually weaker; thus, 91 bales Turkey sorts offered in last sales were all bought in at 95s. to 96s. per cwt., as were also 25 bags brown Barbary at 54s. per cwt.

GLYCERINE.—Finest 1,260 chemically pure, 57s. 6d. to 62s. 6d. per cwt.

HONEY continues in plentiful supply, 218 kegs Chilian being offered in last sales at from 25s. to 50s. per cwt.; also 155 packages Jamaica, of which 3 barrels sold at 29s. to 34s. per cwt.; and there is also some very fine Narbonne in the market.

IODINE steady, at 4d. per oz. dry, 6d. per oz. resublimed.

IPPECACUANHA.—At slightly easier rates a fair business has lately been done, and of 99 serons offered in last sales 71 sold, at prices varying from 2s. to 3s. 4d. per lb.

ISINGLASS.—In last sales, held July 22, 380 packages of East Indian were offered, comprising 192 cases Penang, 127 cases Bombay and Kurrachee, and 61 cases Saigon. The Penang went at generally easier prices, but Bombay made for some sorts better figures than in previous sales.

Penang, 192 cases offered, 100 sold. Leaf good to fine, 3s. 7d. to 3s. 10d.; middling to good, 2s. 11d. to 3s. 4d.; low to ordinary, 1s. 11d. to 2s. 10d. per lb. Tongue, good to fine, 3s. 3d. to 3s. 4d.; ordinary to middling, 2s. 4d. to 2s. 9d. per lb.; purse, 11d. to 1s. 6d. per lb.

Bombay, 127 cases offered, 65 sold. Tongue, good to fine, 3s. 5d. to 3s. 11d.; ordinary to middling, 2s. 4d. to 2s. 8d.; dark or reddish, 1s. 8d. to 1s. 9d. per lb.; purse, 1s. to 1s. 4d. per lb.

Saigon, 61 cases all bought in. Next sales August 26.

LEMON JUICE.—The temporary difficulties of shipment through the quarantine regulations do not increase demand at present, and no pressure for delivery is being shown; prices are nominally higher at 19s. 10s. per pipe f.o.b. Messina.

MORPHIA SALTS are very firm at last prices of 6s. to 6s. 3d. per oz.

OPIUM continues to be very firmly held at prices ranging from 13s. 6d. to 18s. 6d. per lb., according to quality. A feature with opium of late has been that while the demand for lower qualities continually increases, the better sorts fail to command the high prices formerly made.

OILS.—Aniseed continues flat at 6s. 6d. per lb. Cassia slow of sale at 3s. 8d. per lb. H. G. Hotchkiss Oil of Pepper-mint has been sold at 16s. per lb., which price is still asked by some holders, although it is now obtainable at 15s. 6d. per lb.

MENTHOL CRYSTALS are steady in limited demand, and now 45s. per lb. is the price.

OTTO OF ROSES.—The new crop prices through a combination of circumstances have not yet been announced here, being unusually late this year, which has probably caused some old stocks to be insinuated anew as new crop upon the London market, showing the necessity for those who really desire correct information to seek it in the most reliable channels.

PETROLEUM OIL is better at the following prices:—Spot, 6 $\frac{1}{2}$ d. to 7 $\frac{1}{2}$ d.; August-September, 6 $\frac{3}{4}$ d.; September-December, 6 $\frac{13}{16}$ d. to 6 $\frac{7}{8}$ d. per gallon.

PETROLEUM SPIRIT being scarce is dearer. Common at 8 $\frac{1}{2}$ d.; refined, 9 $\frac{1}{2}$ d. per gallon.

PIMENTO is in better demand, several hundred bags having lately changed hands at full rates of 2 $\frac{5}{8}$ d. to 2 $\frac{7}{8}$ d. per lb.

POTASH.—Chlorate meets with more business, at 5 $\frac{3}{4}$ d. per lb. Bichromate steady, at 3 $\frac{1}{2}$ d. per lb.; and Prussiate dull, at 9 $\frac{3}{4}$ d. to 10 $\frac{1}{2}$ d. per lb.

POTASSIUM.—Iodide continues steady; English, at 5s. 4d. to 5s. 6d. per lb., foreign a little less. Bromide, 1s. 4d. per lb.

QUASSIA WOOD remains nominally worth 4l. 10s. to 4l. 15s. per ton, with no demand.

QUICKSILVER is 5l. 6s. 3d. per bottle in first hands, with a most limited trade.

QUININE.—Prices are lower; Howard's at 4s. 6d. in 1-oz. bottles, Pelletier's 4s. 6d. per oz., and foreign (bulk) at 3s. 6d. to 3s. 9d. per oz. Misfortune seems to cling to this article, which is continually being demoralised by force of circumstances of late. Thus, 120,000 oz., bearing the label of the Fabbrica Lombarda di Prodotti Chimici, of Milan, were advertised for sale for this day. Of this quantity 38,000 oz. were said to have been disposed of previously. At the auction Messrs. Green & Pitt put through 81,000 oz. within fifteen minutes. Most of the lots went at 3s. 7d., about 10,000 oz. reaching 3s. 8d. The bulk was bought by American buyers. Beyond this there seems to be no knowing how much more recent events will cause to be thrown upon the market. If readers will go back through our reports upon the article during the current and the past year, they will, we venture to say, find many points of acute interest bearing more or less directly upon the present crisis.

In January of last year we expressed our opinion of the then future of the quinine market very plainly in the following words:—

"Not twenty years since we saw quinine at 4s., and we may see it so again."

We can say now that many would indeed be glad to see 4s. back for each oz. of quinine they hold.

If they will refer to our May, 1883, report, concerning the great sales held in New York, Paris, and London, they will find our opinion of the same expressed as follows:—

"Notwithstanding this great sale, we fail to see that the position of quinine is in any way improved by it, for the quantity has not ceased to exist, but has, after all, simply changed hands."

Again, if they will go back with us to the period of the formation of the quinine combination, they will find in our July and October reports of last year how little we thought of it at starting, but which remarks were proved later on to have been fully justified by its untimely collapse in January of the present year, after about four months' existence, and of which full particulars appeared in our February report.

RHUBARB.—Of 96 cases offered in last sales, 33 sold at slightly easier rates; good Shensi, at 2s. 9d. to 2s. 11d., and Canton at 1s. 5d. to 1s. 9d. per lb.

SAFFRON continues very steady, and really fine Valentia is worth 41s. per lb., although inferior Valentias are being offered at 34s. to 38s. per lb. Alicante qualities in good demand for shipment at unchanged rates.

SAL AMMONIAC steady, at unchanged prices of 42s. and 40s. per cwt.

SALTPETRE.—British refined very quiet, at slightly lower figures of 22s. 3d. per cwt., barrels; 23s. 3d. per cwt., kegs.

SARSAPARILLA.—In last sales 22 cases Honduras bought in at 1s. 8d. to 1s. 10d. per lb. Of 60 bales Jamaica offered, 44 sold at rather easier prices of 1s. 1d. to 1s. 5d. per lb.

SODA.—*Crystals* are quiet at lower price of 3l. 7s. 6d. per ton, ex ship. *Bicarbonate* dearer, at 87. per ton, with moderate trade doing. *Caustic*, fair business; cream, at 9l. 5s., and 60 per cent., 9l. 10s. per ton, ex warehouse.

SOY.—China, 1s. 6d. per gallon, without any demand.

SULPHATE OF COPPER has met with some large transactions, and price is further advanced to 23l. per ton.

TURPENTINE.—Prices have been better, but leave off at only a trifling advance upon those of our last month's report, i.e., spot, 23s. 9d. to 24s.; September to December, 24s. 3d. to 24s. 6d.; January to April, 25s. 3d. to 25s. 6d. per cwt.

VANILLOES steady, at 10s. to 23s. 6d. per lb., according to length and quality.

(FROM OUR AMERICAN CORRESPONDENT.)

NEW YORK, August 2.

There has been no material change in the business situation since last month; the general feeling of dulness, with the exception of one or two articles, continues the most conspicuous feature. Some assert that trade has now reached low-water mark, while plenty confidently predict a further decline all round. In the home trade a cautious disposition is manifested by buyers, there being seldom an inquiry for important quantities, the rule buyers have laid down of purchasing only as requirements make necessary being strictly considered. From England the demand of late has been limited, while from the Continent the inquiry for the usual export articles has been about an average.

The prices quoted in parenthesis on sterling are the London equivalents of the rates here, all marked deductions, discounts, &c., being taken into account.

ALOES.—Advices from Barbados say that the season for the new crop is now over, and that the whole of the yield in gourds has been bought up.

BALSAMS.—*Copaiiba* continues to arrive in quantity, but is dull of sale. We have no demand for export. Prices remain unchanged, except cloudy Maracaibo, which is quoted at 38c. (1s. 8*1/2*d.). *Canada*, contrary to expectation, is firmer; there is a better demand, which, if continued, will send the price up; in barrels, good bright is quoted 35c. (1s. 7*1/2*d.). *Peru* is quoted in first hands at \$1.75 (7s. 6d.). *Tolu* continues neglected.

CASCARA SAGRADA BARK.—The new season's bark is beginning to arrive, and is quoted at about 20c. to 24c. (11*1/2*. to 1s. 1d.), according to quantity for genuine. Thick bark can be bought under this price.

CAMPHOR.—Our market being overstocked, and heavy consignments reported on the way, the price is a little easier, refined being quoted at 17c. (9*1/2*d.).

CUBEBS.—There are no transactions to report. After leading the London market so long we must now take second place.

COD-LIVER OIL.—Prime pale Newfoundland is now quoted at \$1.25 per American gallon, but meets with no buyers. This price is equal to 5s. 2d. (6s. Imperial gallon).

OIL SASSAFRAS has advanced to 50c. (2s. 2d.) in export packages. The distilleries have not been working since May, and stocks are getting small.

ROOTS.—Mexican *Sarsaparilla* has been very scarce. The small supply here has been firmly held for 13c. (7*1/2*d.); a small lot is now on the way. *Seneca* new roots are just

coming on the market, but no price has been established as yet; holders of old stocks have reduced their price. It is expected that 45c. (2s.) will be the price asked for new; this appears a reasonable figure. *Serpentaria* arrived in considerable quantities, but the market being quite bare, it was bought up as soon as offered at high rates, and 35c. (1s. 8*1/2*d.) is still the quotation ruling here. It may be cheaper later on, but this depends on the demand.

SPERMACETI.—The price for white block has advanced to 22c. (1s. 0*1/2*d.).

GUARANA.—The large parcel referred to in last month's report was all bought up for consumption at prices ranging from \$1.75 to \$2 (7s. 9*1/2*d. to 8s. 9*1/2*d.); a further quantity is expected shortly.

OIL OF PEPPERMINT.—Since last month's report the consumption has largely increased, the demand from Germany being enormous, while shipments to your market have been few. Buyers at your side do not appear to have realised the true position of affairs, and no doubt attribute the recent advance in London to the old "peppermint-ring"; those, however, who have deferred making their purchases will find that for some time to come, at any rate, they will not see lower rates, while there is every indication of its being dearer. The price for prime Maine County oil in tins has advanced here to \$3.25 (14s. 6*1/2*d.); H. G. Hotchkiss' brand is held for \$3.50 (16s. 6*1/2*d.); and a few cases of L.B.H. can be had at \$3.30 (15s. 6*1/2*d.). The growers are now fully alive to the condition of the market, and as the peppermint-oil crop is one easily stored away, and not likely to deteriorate by keeping for a year or so, there can be little doubt but they will hold on to the growing crop for very high prices. It is next year that a scarcity may be expected, although before the new crop comes on the market in October it is thought there will be little, if any, stock left in second hands here.

OPIUM REPORT.

The following from Mr. Richard Barker, Smyrna, dated July 31, 1884, will show the position:—

When my last report was issued on the 28th ult., the opium crop in the Northern districts was progressing favourably, and there was every reason to believe that the outturn this year would be fully 6,000 baskets or cases. Early in July, however, hot southerly winds set in, causing serious damage to the poppy plantations in some of the Karahissar districts and it is now said that the entire crop will not exceed 5,000 in all, including the soft shipping descriptions, which are estimated at 1,600 to 1,800 cases.

Owing to the above change in the prospect of the crop, as also to the late reports from London that the Persian drug will be again short this year, our market has advanced considerably, as will be seen by our quotations which are as hereunder:—

New Yerli, 14s. 2*1/2*d. per lb. f.o.b.; new current, 13s. 1*1/2*d. per lb. f.o.b.; old Karahissar, 13s. per lb.; old Yerli Tahqali, 12s. 8*1/2*d. per lb.; ditto, usual run, 12s. 4*1/2*d. per lb.; Tchicunti, 11s. 10*1/2*d. per lb., very scarce, f.o.b.

The sales, however, during the month have not been important, the entire transactions not exceeding 115 cases, but they would have been larger had sellers been more moderate in their terms. The stock of old opium existing in Turkey the end of June, 1883, amounted in all to 1,700 baskets, and the crop yielded 6,800, making a total of 8,500 baskets. Stock of old opium the end of June of the present year, 1,200; estimated crop, 5,000 to 6,200; deficit as compared to last year, 2,300 baskets.

Such is our present position, and it is owing to the above deficit of 2,300 cases that our holders are so tenacious; nevertheless it is not Turkey that can control the consuming markets, and our dealers must sooner or later be guided by the value of this drug in England and America. The quality, so far, of this year's crop is particularly fine, both as regards colour and intrinsic value, and it is to be hoped that such will also be the case with the Karahissar and soft shipping descriptions, the weather having been fine and dry during the harvesting.

The arrivals of new opium to date amount to 530 baskets, against 1,323 at the same time last year, but, as mentioned in my last report, this is owing to the shortness of the crop in the immediate neighbourhood of Smyrna.

Monthly Price Current.

The prices quoted in the following list are those actually obtained in Mincing Lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.

CHEMICALS.

ACIDS—

		Last Month	This Month
	per lb.	s. d.	s. d.
Acetic		0 2½ to 0	0 2½ to 0
pure	"	0 5 .. 0 9	0 5 .. 0 9
glacial	"	0 8 .. 1 1	0 6 .. 1 0
Benzoin Sublimate		0 0 .. 3 6	0 0 .. 3 6
Ex Gum	per oz.	0 6½ .. 0 0	0 6½ .. 0 0
Citric		1 5½ .. 0 0	1 5½ .. 0 0
Gallic	"	3 2 .. 3 6	3 2 .. 3 6
Hydrochloric	per cwt.	4 6 .. 7 6	4 6 .. 7 6
Nitric	per lb.	0 3 .. 0 3½	0 3 .. 0 3½
Oxalic	"	0 6 .. 0 0	0 6 .. 0 0
Sulphuric	"	0 0½ .. 0 1	0 0½ .. 0 1
Salicylic	"	6 9 .. 9 6	6 9 .. 9 6
Tannic	"	1 4 .. 2 9	1 4 .. 2 9
Tartaric, English	"	1 7 .. 1 7½	1 7½ .. 1 7½
foreign	"	1 6 .. 0 0	1 6½ .. 0 0
ANTIMONY, crude	per cwt.	22 6 .. 23 0	22 6 .. 0 0
star	"	44 0 .. 46 0	42 0 .. 44 0
ARSENIC, lump	"	22 0 .. 24 0	22 0 .. 24 0
powder	"	12 6 .. 12 9	12 6 .. 12 9
BRIMSTONE, rough	"	8 0 .. 8 6	8 0 .. 8 6
roll	"	8 9 .. 10 0	8 9 .. 10 0
flour	"	10 0 .. 12 6	10 0 .. 12 6
GLYCERINE, German			
refined	"	67 6 .. 70 0	57 6 .. 62 6
crude brown	"	37 6 .. 42 6	37 6 .. 42 6
EODOFORM	per lb.	8 0 .. 8 2	8 0 .. 8 2
IODINE, dry	per oz.	0 4 .. 0 0	0 4 .. 0 0
resublimed	"	0 6 .. 0 0	0 6 .. 0 0
MAGNESIA, calcined	per lb.	0 10 .. 1 4	0 10 .. 1 4
Hwds.	"	5 0 .. 0 0	5 0 .. 0 0
MERCURY	per bot.	107 6 .. 0 0	106 3 .. 0 0
PRECIPITATE, red	per lb.	3 0 .. 0 0	3 0 .. 0 0
white	"	2 11 .. 0 0	2 11 .. 0 0
PRUSSIAN BLUE	"	1 8 .. 2 0	1 8 .. 2 0
SANTONINE	"	11 6 .. 0 0	11 6 .. 0 0
SALICINE	"	10 0 .. 0 0	10 0 .. 0 0
THYMOL	"	21 6 .. 0 0	21 6 .. 0 0
GALTS—			
Alum	per ton	117 6 .. 0 0	117 6 .. 0 0
powder	"	127 6 .. 0 0	127 6 .. 0 0
Ammonia:			
Carbonate	per lb.	0 6½ .. 0 0	0 5 .. 0 5½
Hydrochlorate,			
crude, white	"	600 0 .. 760 0	600 0 .. 760 0
Sulphate	per ton	340 0 .. 360 0	307 6 .. 0 0
Argol, Cape	per cwt.	83 0 .. 96 0	83 0 .. 96 0
Red	"	70 0 .. 90 0	70 0 .. 90 0
Oporto, red	"	38 0 .. 42 0	38 0 .. 42 0
Bleaching powder	"	9 6 .. 0 0	9 6 .. 0 0
Borax, British refined	"	40 0 .. 42 0	40 0 .. 42 0
Calomel	per lb.	2 6 .. 0 0	2 6 .. 0 0
Chloral hydrate	"	4 5 .. 4 7	4 5 .. 4 7
Liebreich's	"	5 6 .. 6 0	5 6 .. 6 0
Copper:			
Sulphate	per cwt.	22 3 .. 22 6	23 0 .. 0 0
Copperas, green	per ton	55 0 .. 0 0	55 0 .. 0 0
Corrosive Sublimate	per lb.	1 11 .. 0 0	1 11 .. 0 0
Cream Tartar, French	per cwt.	126 6 .. 127 0	126 0 .. 0 0
brown	"	112 0 .. 0 0	112 0 .. 0 0
Epsom Salts	"	4 0 .. 6 0	4 0 .. 6 0
Glanbar Salts	"	4 0 .. 5 0	4 0 .. 5 0
Magnesia: Carbonate	"	40 0 .. 0 0	40 0 .. 0 0
Pond, Hwds.	"	72 0 .. 0 0	72 0 .. 0 0
Morphine Murias	"	6 0 .. 6 3	6 0 .. 6 3
Phosphorus	per lb.	2 3 .. 2 4	2 3 .. 2 4
Potash:			
Bichromate	"	0 3½ .. 0 0	0 3½ .. 0 0
Carbonate:			
Potashes, Canada, 1st sort	per cwt.	29 0 .. 0 0	29 0 .. 0 0
Pearlashes, Canada, 1st sort.	"	46 0 .. 46 6	46 0 .. 46 6
Chlorate	per lb.	0 5½ .. 0 0	0 5½ .. 0 0
Prussiate	"	0 10 .. 0 10½	0 10 .. 0 10½
red	"	1 11 .. 2 0	1 11 .. 2 0
Sulphate	per cwt.	10 6 .. 11 6	10 6 .. 11 6
Potassium:			
Bromide	per lb.	1 4 .. 0 0	1 4 .. 0 0
Chloride	per cwt.	9 0 .. 0 0	9 0 .. 0 0
Iodide	per lb.	5 4 .. 5 6	5 4 .. 5 6
Quinine:			
Sulphate, British, in bottles	per oz.	5 6 .. 0 0	4 10 .. 0 0
Sulphate, French	"	5 3 .. 0 0	4 6 .. 0 0
Sulphate, German	"	4 9 .. 0 0	3 9 .. 0 0
Sal Acetos	per lb.	0 8½ .. 0 0	0 8½ .. 0 0
Sal Ammoniac, British	per cwt.	40 0 .. 42 0	40 0 .. 42 0
Saltpetre:			
Bengal, 6 per cent, or under	"	18 9 .. 19 0	16 3 .. 16 6

SALTPETRÉ:—(cont.)		Last Month	This Month
	per cwt.	s. d.	s. d.
Bengal, over 6 per cent.		18 0 to 18 6	16 0 to 0 0
British, refined	"	22 6 .. 23 6	22 3 .. 23 3
Soda: Bicarbonate	"	7 9 .. 8 0	8 0 .. 0 0
Hwd's.	"	45 0 .. 0 0	45 0 .. 0 0

CARBONATE:		Last Month	This Month
	per deg.	s. d.	s. d.
Soda Ash	per cwt.	0 1½ .. 0 1½	0 1½ .. 0 1½
Soda Crystals	per cwt.	3 4½ .. 3 6	3 4½ .. 0 0
Caustic	"	9 9 .. 10 0	9 3 .. 9 6
Hyposulphite	"	7 9 .. 8 0	7 9 .. 8 0
Nitrate	"	11 3 .. 0 0	11 3 .. 0 0
Zinc Sulphate	"	12 0 .. 14 0	12 0 .. 14 0
SUGAR OF LEAD, White Brown	"	30 0 .. 34 0	30 0 .. 34 0

VERDIGRIS:		Last Month	This Month
	per lb.	s. d.	s. d.
VERDIGRIS	0 9½ .. 1 0	0 9½ .. 1 0	0 9½ .. 1 0
VERMILION, English China	"	2 3 .. 0 0	2 3 .. 0 0
"	2 4 .. 0 0	2 4 .. 0 0	2 4 .. 0 0

DRUGS:		Last Month	This Month
	per cwt.	s. d.	s. d.
ALOES, Hepatic.	87 6 .. 100 0	75 0 .. 90 0	75 0 .. 90 0
Socotrine	"	95 0 .. 180 0	90 0 .. 140 0
Cape, good	"	47 0 .. 49 0	40 0 .. 45 0
Inferior	"	30 0 .. 46 0	25 0 .. 40 0
Barbados	"	60 0 .. 150 0	50 0 .. 130 0
Curaçoa	"	50 0 .. 100 0	40 0 .. 75 0

AMBERGRIS, grey		Last Month	This Month
	per oz.	s. d.	s. d.
AMBERGRIS—			
BALSAWOOD—			
Canada	per lb.	1 10 .. 2 0	1 10 .. 2 0
Capivi	"	1 10 .. 2 0	1 10 .. 2 0
Peru	"	8 0 .. 8 3	8 0 .. 8 3
Tolu	"	1 10 .. 1 11	1 9 .. 0 0

BARKS:		Last Month	This Month
	per cwt.	s. d.	s. d.
CANELLA ALBA	25 0 .. 27 6	25 0 .. 27 6	25 0 .. 27 6
CASCARILLA	40 0 .. 45 0	40 0 .. 45 0	40 0 .. 45 0

CINCHONA—		Last Month	This Month
	per lb.	s. d.	s. d.
Peru, grey	0 9 .. 1 8	0 9 .. 1 8	0 9 .. 1 8
Calisaya, flat quill	"	1 0 .. 2 0	0 6 .. 2 0
Carthagena	"	1 6 .. 6 0	0 9 .. 2 6
Columbian	"	0 7 .. 2 9	0 6 .. 1 9
Cuprea	"	0 5 .. 1 3	0 3 .. 1 4
New Granada	"	0 9 .. 3 0	0 7 .. 2 0
Pitayo & Maracaibo	"	0 6 .. 1 10	0 4 .. 1 5
Red	"	2 0 .. 9 0	2 0 .. 9 0
East India, crown red	"	0 11 .. 2 6	0 6 .. 2 0

BUCHU LEAVES:		Last Month	This Month
	per cwt.	s. d.	s. d.
CAMPHOR, China	51 0 .. 55 0	55 0 .. 57 6	55 0 .. 57 6
Japan	52 0 .. 53 0	57 6 .. 60 0	57 6 .. 60 0
Refin. Eng.	"	0 11 .. 0 0	0 11 .. 0 0
Tablets	"	0 11 .. 0 0	1 04 .. 0 0

CANTHARIDES, China		Last Month	This Month
	per lb.	s. d.	s. d.
Russian	0 11 .. 0 0	0 11 .. 0 0	0 11 .. 0 0
CANTHARIDES, China	"	2 6 .. 3 0	2 6 .. 3 0
Russian	"	7 0 .. 0 0	7 0 .. 0 0

CAMOMILE FLOWERS		Last Month	This Month
	per cwt.	s. d.	s. d.
CASTOREUM	20 0 .. 45 0	46 0 .. 48 0	46 0 .. 48 0
CHIRETTA	26 0 .. 38 0	26 0 .. 38 0	26 0 .. 38 0

FRUITS & SEEDS (see also Seeds and Spices)		Last Month	This Month
	per cwt.	s. d.	s. d.
Anise, China Star.	95 0 .. 100 0	95 0 .. 100 0	95 0 .. 100 0
Russian	20 0 .. 30 0	20 0 .. 30 0	20 0 .. 30 0
Beans, Tonquin	3 0 .. 5 0	3 0 .. 5 0	3 0 .. 5 0
Cardamoms, Malabar, good	"	6 0 .. 8 0	6 0 .. 8 0
inferior	"	3 0 .. 4 0	3 0 .. 4 0
Aleppy	"	3 0 .. 4 6	3 0 .. 4 6
Madras	"	1 6 .. 3 6	1 6 .. 3 6
Ceylon	"	2 0 .. 2 10	2 0 .. 2 10
Malabar sorts.	"	4 0 .. 7 0	4 0 .. 7 0
Cocculus Indicus	11 0 .. 13 0	11 0 .. 13 0	11 0 .. 13 0
Coco-cynth, apple	0 10 .. 1 3	0 10 .. 1 3	0 10 .. 1 3
Cubeb	340 0 .. 400 0	195 0 .. 250 0	195 0 .. 250 0
Cumin	"	30 0 .. 34 0	30 0 .. 34 0
Fenugreek	"	10 0 .. 12 0	10 0 .. 12 0
Juniper Berries	"	8 6 .. 11 0	8 6 .. 11 0
Nux Vomica	"	7 6 .. 10 0	7 6 .. 10 0
Tamarinds, E. India	"	8 0 .. 12 0	8 0 .. 12 0
W. India	"	18 0 .. 20 0	18 0 .. 20 0
Vanilla, large	20 0 .. 25 0	20 0 .. 25 0	20 0 .. 25 0
inferior	"	8 0 .. 18 0	8 0 .. 18 0

FLOWERS—Dalmatian		Last Month	This Month
	per cwt.	s. d.	s. d.
Caucasian	35 0 .. 45 0	25 0 .. 50 0	25 0 .. 50 0
Jamaica	32 6 .. 44 0	29 0 .. 44 0	32 6 .. 44 0

IPECACUANHA		Last Month	This Month
	per lb.	s. d.	s. d.
Tongue sort.	"	1 2 .. 4 5	1 6 .. 4 3
East India	"	1	

		Last Month	This Month	Oils:—(cont.)	Last Month	This Month
Essential Oils:	per lb.	s. d.	s. d.	SEAL, yellow to tinged..	£ s. per tun	£ s. per tun
Almond	30 0 .. 0 0	30 0 .. 0 0	6 6 .. 6 9	brown	28 0 .. 32 0	27 0 .. 28 0
Anise-seed, star....	6 6 .. 6 9	6 6 .. 6 9	8 0 .. 13 0	"	27 0 .. 0 0	24 0 .. 26 0
" German, &c.	8 0 .. 13 0	8 0 .. 13 0	5 6 .. 6 0	SPERM	63 0 .. 0 0	58 0 .. 0 0
Bergamot	5 6 .. 6 0	5 6 .. 6 0	3 3 .. 0 0	COP	31 0 .. 32 0	35 0 .. 0 0
Cajeput	per hot.	3 3 .. 0 0	5 6 .. 0 0	WHALE, South Sea, pale	30 0 .. 34 0	28 0 .. 29 0
Caraway	per lb.	5 6 .. 0 0	5 6 .. 0 0	yellow	30 0 .. 0 0	26 0 .. 28 0
Cassia	3 9 .. 0 0	3 8 .. 0 0	3 8 .. 0 0	brown	23 0 .. 28 0	24 0 .. 0 0
Cinnamon	per oz.	1 9 .. 2 6	1 9 .. 2 6	Sardine	25 0 .. 27 0	25 0 .. 27 0
Cinnamon-leaf	"	0 23 .. 0 0	0 23 .. 0 0	OLIVE, Seville	0 0 .. 0 0	39 0 .. 40 0
Citronelle	"	0 1 .. 0 0	0 1 .. 0 0	Gioja	36 0 .. 37 0	36 0 .. 37 0
Clove	per lb.	3 3 .. 3 6	3 6 .. 4 0	Levant	41 0 .. 41 10	41 0 .. 41 10
Juniper	1 6 .. 2 0	1 6 .. 2 0	1 6 .. 2 0	Mogador	35 10 .. 36 0	35 10 .. 36 0
Lavender, Exotic	6 9 .. 8 6	6 9 .. 8 6	6 9 .. 8 6	Spanish	42 10 .. 0 0	39 0 .. 40 0
Mitcham	130 0 .. 0 0	130 0 .. 0 0	130 0 .. 0 0	Sicily	42 0 .. 0 0	39 0 .. 0 0
Lemon	3 0 .. 6 0	4 6 .. 6 0	4 6 .. 6 0	COCOANUT, Cochin	33 0 .. 33 10	32 0 .. 32 10
Lemongrass	per oz.	0 1 .. 0 0	0 1 .. 0 0	Ceylon	32 10 .. 0 0	31 0 .. 0 0
Neroli	7 0 .. 0 0	7 0 .. 0 0	7 0 .. 0 0	Mauritius	0 0 .. 0 0	0 0 .. 0 0
Nutmeg	9 0 .. 0 11	9 0 .. 0 11	9 0 .. 0 11	PALM, fine	35 0 .. 0 0	34 0 .. 34 10
Orange	per lb.	12 0 .. 0 0	12 0 .. 0 0	LINSEED	18 10 .. 18 15	19 10 .. 19 15
Otto of Roses	per oz.	18 0 .. 38 0	18 0 .. 38 0	RAPESEED, English, pale	28 10 .. 0 0	29 0 .. 0 0
Patchouli	"	1 4 .. 2 0	1 4 .. 2 0	brown	26 15 .. 0 0	27 0 .. 0 0
Peppermint:				COTTONSEED	26 0 .. 27 0	26 0 .. 27 0
American	per lb.	12 0 .. 0 0	12 0 .. 0 0	LARD	47 0 .. 48 0	41 0 .. 43 0
(H. G. Hotchkiss)	"	15 0 .. 0 0	15 6 .. 16 0	TALLOW	28 10 .. 45 0	28 10 .. 45 0
English	"	25 0 .. 28 0	25 0 .. 28 0	TURPENTINE, American	23 6 .. 24 0	23 9 .. 24 6
German	"	8 0 .. 14 0	8 0 .. 14 0	PETROLEUM, refined	per gall. 0 6 5 .. 0 6 5	0 6 4 .. 0 7 5
Japan	"	7 0 .. 9 0	7 0 .. 9 0	Spirit	0 7 .. 0 7 3	0 8 2 .. 0 9 2
Menthol crystals	"	40 0 .. 45 0	45 0 .. 0 0	SEEDS.		
Rosmary	"	2 6 .. 3 9	2 6 .. 3 9	CANARY	per qr. 45 0 .. 60 0	45 0 .. 60 0
Sassafras	"	2 6 .. 0 0	2 6 .. 0 0	CARAWAY, English	per cwt. 0 0 .. 0 0	0 0 .. 0 0
Spearmint	"	12 0 .. 0 0	12 0 .. 0 0	German, &c.	"	20 0 .. 26 0
Thyme	"	2 6 .. 0 0	2 6 .. 0 0	CORIANDER	"	9 0 .. 21 0
Mace, expressed	per oz.	0 2 .. 0 0	0 2 .. 0 0	HEMP	per qr. 38 0 .. 0 0	38 0 .. 0 0
OPIUM, Turkey	per lb.	17 0 .. 21 0	16 0 .. 18 6	LINSEED, English	Black Sea & Azof	0 0 .. 0 0
" inferior	"	12 6 .. 16 0	13 6 .. 15 0	Calcutta	"	40 0 .. 43 6
QUASSIA (bitter wood)	per ton	90 0 .. 95 0	90 0 .. 95 0	Bombay	"	43 6 .. 44 0
RHUBARB, China, good and fine	per lb.	2 9 .. 4 4	2 0 .. 3 6	St. Petersburg	"	35 0 .. 38 0
" Middling to fair	"	1 0 .. 2 6	1 6 .. 2 0	MUSTARD, brown	per bush. 10 0 .. 15 0	10 0 .. 15 0
ROOTS—Calumba	per cwt.	20 0 .. 25 0	20 0 .. 25 0	white	6 0 .. 10 0	8 0 .. 12 0
China	"	20 0 .. 0 0	20 0 .. 0 0	POPPY, East India	per qr. 43 0 .. 0 0	43 0 .. 0 0
Cus-Cus	"	30 0 .. 21 0	30 0 .. 21 0			
Galangal	"	21 6 .. 0 0	21 6 .. 0 0			
Gentian	"	25 0 .. 27 6	25 0 .. 27 6			
Orris	"	23 0 .. 50 0	23 0 .. 50 0			
Pellitory	"	68 0 .. 80 0	68 0 .. 80 0			
Pink	per lb.	1 6 .. 0 0	1 6 .. 0 0			
Rhatany	"	0 5 .. 0 6	0 5 .. 0 6			
Soneka	"	2 4 .. 2 6	2 4 .. 2 6			
Snake	"	1 6 .. 0 0	1 6 .. 0 0			
SAFFRON, Valencia	"	36 0 .. 42 6	36 0 .. 42 6			
Alicante	"	25 0 .. 30 0	25 0 .. 30 0			
SARASAPARILLA, Lima	"	0 6 .. 1 0	0 6 .. 1 0			
Guayaquil	"	1 2 .. 1 5	1 2 .. 1 5			
Honduras	"	1 0 .. 1 3	1 0 .. 1 3			
Jamaica	"	1 6 .. 1 10	1 6 .. 1 10			
SASSAFRAS	per cwt.	0 0 .. 0 0	0 0 .. 0 0			
SCAMMONY, Virgin second and ordinary	per lb.	32 0 .. 35 0	32 0 .. 35 0			
SENNA, Bombay	"	15 0 .. 28 0	15 0 .. 28 0			
Tinmively	"	0 21 .. 0 0	0 21 .. 0 0			
Alexandria	"	0 3 .. 1 2	0 3 .. 1 2			
SPERMACETI, refined	"	0 9 .. 1 6	0 9 .. 1 6			
American	"	1 3 .. 0 0	1 3 .. 0 0			
SQUILLS	"	0 10 .. 0 0	0 10 .. 0 0			
GUMS.						
AMMONIACI, drop	per cwt.	2 10 .. 3 6	2 10 .. 3 6			
ANIMI, fine washed sorts	"	18 0 .. 20 0	18 0 .. 20 0			
ARABICO, pale picked sorts, mid. to fine	"	13 0 .. 17 10	13 0 .. 17 10			
TURKEY, pick. gd. to fin. second & inferior .. sorts	"	2 15 .. 3 10	2 15 .. 3 10			
"	"	1 10 .. 2 6	1 10 .. 2 6			
"	"	9 10 .. 10 0	9 0 .. 9 10			
ASAFETIDA, cm. to fin. & 2nd	"	6 10 .. 8 10	6 10 .. 8 10			
BENJAMIN, Siam, 1st Sumatra	"	4 15 .. 5 0	4 10 .. 4 15			
"	"	3 0 .. 3 15	3 0 .. 3 15			
COPAL, Manila	"	17 0 .. 35 0	17 0 .. 35 0			
"	"	5 0 .. 11 0	5 0 .. 11 0			
Angola, red	"	15 0 .. 67 0	15 0 .. 67 0			
DAMAR, pale	"	145 0 .. 152 6	145 0 .. 152 6			
EUPHORBIUM	"	77 6 .. 90 0	77 6 .. 90 0			
GALBANUM	per lb.	0 3 .. 0 10	0 3 .. 0 10			
GAMBOGIE, picked pipe	per cwt.	230 0 .. 300 0	230 0 .. 300 0			
GUAIACUM	per lb.	0 9 .. 2 5	0 9 .. 2 5			
KINO	per cwt.	45 0 .. 0 0	45 0 .. 0 0			
KOWRIE, sorts selected	"	115 0 .. 260 0	115 0 .. 260 0			
MASTIC, picked	"	1 6 .. 3 3	1 6 .. 3 3			
MYRRH, good and fine .. ordinary to fair	per cwt.	100 0 .. 150 0	100 0 .. 150 0			
"	"	80 0 .. 140 0	80 0 .. 140 0			
OLIBANUM, b. drop .. amber and yellow	"	34 0 .. 39 0	34 0 .. 39 0			
SENEGAL	"	36 0 .. 0 0	36 0 .. 0 0			
SANDARAC	"	40 0 .. 45 0	40 0 .. 45 0			
HELLAC, Orange Liver	"	90 0 .. 110 0	90 0 .. 110 0			
THUS	"	95 0 .. 110 0	65 0 .. 94 0			
TRAGACANTH, leaf in sorts	"	75 0 .. 100 0	64 0 .. 67 0			
OILS.						
SEAL, pale	per tun	£ s. £ s. £ s. £ s. £ s.	£ s. £ s. £ s. £ s.	VEGETABLE, Japan	per lb. 2 12 .. 2 14	£ 2 12 .. £ 2 14
"	"	36 0 .. 0 0	30 0 .. 0 0	Paraffin	0 4 .. 0 6	0 4 .. 0 6
WOOD, DYE, Bar	"	2 12 .. 2 14	2 12 .. 2 14	WOOD, DYE, Bar	£ 3 15 .. 4 2/6	£ 3 15 .. 4 2/6
Brazil	"	10 0 .. 20 0	10 0 .. 20 0	Cam	16 0 .. 30 0	16 0 .. 30 0
Fustie, Cuba	"	0 0 .. 6 0	0 0 .. 6 0	Jamaica	4 5 .. 5 15	4 5 .. 5 15
LOG WOOD, Campeachy	"	7 0 .. 9 10	7 0 .. 9 10	Jamaica	5 0 .. 5 17/6	5 0 .. 5 17/6
LIMA, first pile	"	7 12/6 .. 8 7/6	7 12/6 .. 8 7/6	RED SANDARS	6 2/6 .. 6 5	6 2/6 .. 6 5



Vaccinosis and Homœoprophylaxis.

To the Chemist and Druggist—

SIR.—In your review of my little work, entitled "Vaccinosis and Homœoprophylaxis," you say:—"Dr. Burnett writes with apparently the utmost candour; but he ought not to be surprised if a sceptical reader of his certainly striking cases should ask him, Are these twenty cases all you have treated with *thuja*? If yes, why not say so; if no, why have you not reported the rest?"

I should be very much obliged if you would allow me to say that these twenty cases are by no means all that I have treated with *thuja*, and that the reason I have not reported the rest is the one stated in "Vaccinosis," viz., I did not think it would serve any useful purpose, because absolute proof of my thesis is not possible, even though I reported treble as many cases. Further proof must come from other men; my mind must be considered as biased in favour of my hypothesis.

May I so far trespass further upon your valuable space to suggest, in the interest of humanity and of her servant medicine, that your numerous readers try *thuja occidentalis* in the very numerous instances that daily pass before them of persons who aver that they suffer from this or that ever since they were vaccinated? Let us leave aside all questions of pathies and theories, and just face the fact that so many really do suffer so severely subsequently to vaccination, and then remember that it is claimed for *thuja* that it will very often cure these same sufferings. There is plenty of *thuja* in our gardens; a tincture is easily made, and two or three drops in an 8-oz. mixture of water and a little spirit, would be all in the way of legitimate business. *M. ducus nascitur, non fit*, may not fit the foibles of the faculty, but is very true all the same.

Your obedient servant,

5 Holles Street, Cavendish Square, W. J. COMPTON BURNETT, M.D.
July 28.

Homœopathy and Cholera.

To the Chemist and Druggist—

SIR.—Having regard to the Conference recently held at the offices of the Metropolitan Asylums' Board to consider the provision of hospital accommodation for cholera cases—should such cases arise in London—I am directed by the Board of Management of this hospital to acquaint you that at a joint meeting of the board and medical council of the hospital held on the 24th inst., it was decided, in case of need, to devote the whole of the 72 beds in this hospital to cholera cases, as was done during the prevalence of that epidemic in the year 1854.

I am also to invite your attention to a return made (on the motion of Lord R. Grosvenor, M.P.) to the House of Commons, printed by order of the House, May 21, 1855, detailing the course of treatment for cholera cases pursued at the Homœopathic Hospital, which was at the time in Golden Square, and the results obtained by that treatment. I enclose a copy of that return, in which I have marked the more important paragraphs to show at a glance the importance of the homœopathic treatment of cholera.

I have the honour to be your obedient servant,
G. A. CROSS (Secretary).

London Homœopathic Hospital and Medical School,
Great Ormond Street, Bloomsbury, W.C.
July 31.

The Pharmaceutical Conference.

To the Chemist and Druggist—

SIR.—As a "Minor" man, "unconnected" with the Pharmaceutical Society, I was, of course, delighted with the rules which governed the recent pharmaceutical conversations. I am deeply disappointed that some such rules as the following have not been formulated for the guidance of the Conference.

I. Pharmaceutical chemists, who are also members of the Pharmaceutical Society, may introduce their lady friends, but are informed that dogs must be led by a string or chain.

II. Chemists and druggists, "connected" with the Society, are admitted on production of a certificate of vaccination, but are not allowed to bring their female friends. They are also requested not to smoke short clay pipes, nor to spit on the floor.

III. Chemists and druggists "unconnected" with the Society are only admitted under the care of policemen. They must also inform the committee how often they have been in gaol, and for what offences.

As Captain Cuttle would say, "Pharmaceutical prophets, make a note ou."
Yours obediently,

INSTANET.

[It is only fair to point out that the British Pharmaceutical Conference must not be made responsible for the want of courtesy of the Conversazione committee.]

Abolition of Co-operative Stores.

To the Chemist and Druggist—

SIR.—I would beg to draw the attention of the trade, wholesale and retail, to the following:—

Nowadays we have co-operative stores thrown into our faces if we ask a reasonable or standard price for the goods we offer, and it is disgusting to know that those who do it are what we term the "upper ten." I feel that the time is fast approaching when we will be called on to defend ourselves and our families from the "scalpers." I trust before that time comes we will join hands with other traders, and abolish co-operative stores. It can be done easily if we will only put our shoulders to the wheel, and work like men who are fighting for their own.

The ideas which I have in my head, I think, will be worth putting before your readers; at any rate, you can have them for what they are worth. We are daily looking forward to a dissolution of Parliament, and when it comes, why should we not vote for those who will have our interests at heart? The question may arise, Are the stores acting fairly? I say, no. The directors are mostly paid servants of the Government, who are enjoying their pensions and opening shop in opposition to us, who are their main support. Why should we pay taxes to support men who open shops in opposition to us? If this is the way the public funds are to go, the sooner some of our questioning members ask about it the better. If the Government are as badly off as they say, why in the name of goodness do they not make their officers and servants do an honest day's work, from 9 o'clock A.M. to 6 P.M. They would only have to employ about two-thirds of the hands they have now, and after that day's work would be over they would not care to undertake other business, as directors, or otherwise. A chemist works hard about eleven hours daily, and pays duty and taxes. A co-operative works four or six hours daily, has no duty or income tax to pay, receives our money, and opposes us with all his might by underselling us. Is this fair or reasonable? I am sorry to say in Dublin the chemists are going on co-operative principles, too, as are the grocers, &c., and some pharmacists in town are now giving 8-oz. mixtures for 9d. and 10d. to Government officials—in fact, are supporting those they have a right to make pay higher than an ordinary man, and this is to keep them from the stores. Now, I do not believe in Ireland any person will get their prescriptions compounded at the stores. I do not see what the end of it will be if we are to get out of bed at one or two in the morning, make up an 8-oz. mixture, and give it for 10d. Why should not the chemists, druggists, wine merchants, grocers, and publicans join hands over this matter, and at the coming election show, by their presence on the public platform, that they have a voice, and a loud one, in defending their rights? Now is the time to sow the seed, and slowly let it germinate, until the voices of honest, hardworking tradespeople shall strike terror in the hearts and minds of those "scalpers" who are trying daily to rob us of our legitimate business. Are we to support, in the coming election, gentry who will not vote or raise their voices in our defence; or will we support some of our brother chemists, who will vote and look to our interests? I should think the question answers itself. Farmers vote for those who will do the most for them; let the shopkeepers do the same.

I am, sir, yours respectfully,

DUBLIN. "NOT A SCALPER." (44/191).

Our correspondent does not seem to be aware that numerous efforts have been made to get traders to combine to influence Government through Parliament, and Parliament through the elections. But hitherto no association has been formidable enough to "strike terror" into the souls of our legislators. At the last general election the question was put to candidates hundreds of times, whether they would endeavour to prevent Government servants trading, and many very worthless promises were extracted. As far as Government servants are concerned, we believe every principle of justice demands that they should be prevented from keeping shop at all. We have no wish to interfere with the votes of men who really earnestly vote for a principle. But the traders, and they are not a few, who do not perceive that one party is a great deal purer than the other, might quite justly withhold their votes entirely until they can get a candidate who will undertake honestly to support their reasonable demand.—ED. C. & D.]

25/192. T. G.—Apprenticeship.—What becomes of an apprentice, who is bound for four years, when the business is sold at the end of three years? Can he claim any compensation, having paid a fee of 30*l.*, or is he compelled to go over to the new employer? The contract of the apprenticeship is a personal one, and the apprentice cannot be compelled to accept a substituted master any more than the master could be compelled to accept a substituted apprentice. The death or bankruptcy of the master voids the contract between him and his apprentice, but in any other case he must be willing to make equitable arrangements, always supposing there is no provision in the indenture for such a circumstance. At the same time it must be remembered that generally at the end of three years it would be to the advantage of the apprentice to be released, and he would probably only recover nominal damages if he sued.

Colour of Butter.

To the Chemist and Druggist—

SIR,—In your last number of THE CHEMIST AND DRUGGIST you have referred to my new preparation, "Marigoldine," for colouring butter, cheese, &c., and you say "there is an old popular error that it is the buttercups and marsh marigolds (*Caltha palustris*) that give the fine colour to meadows and butter in spring. If the cows eat the flowers so that they could colour the butter, the meadows would not look so gay; but the error is sufficiently widespread and deeply rooted to make the name an appropriate one."

I cannot accept this opinion altogether, inasmuch as it is an established fact that meadows which are fed in in the spring and early summer, in which the marsh marigold and ranunculi abound, are very soon denuded of their beauty; but pastures shut up for hay alone retain that rich golden colour, which adorns the landscape, and is the subject of so much admiration. Again, at that time of the year, the demand for butter-colouring is comparatively small, attributable, surely, to the richness of the herbage on which the animal feeds.

I may here mention that I have a farm consisting principally of grass land, and a dairy in connection, which has given me the opportunity of close observation, and assisted me considerably in knowing practically that my preparation will give that uniformity of colour in the most wholesome form at such times of the year when nature does not provide it.

I thank you for your mention that you consider the name an appropriate one.

I remain, very faithfully yours,

Middlesex, July 19.

WILLIAM BUSH.

IT was a summer's evening,
The Druggist's work was done,
And hard-earned coppers from his till
He counted one by one.
Stood, mutely gazing on the scene,
His young apprentice (call him Green).

He saw his friend, the errand boy,
Had something smooth and round,
That, mixed with sweepings of the shop,
His prying eyes had found.
He turned to ask what he had found
That was so small, and smooth, and round.

The Druggist took it from the lad,
Who stood expectant by,
And then the old man's face grew sad,
And, with a deep-drawn sigh,
"Alas! it is a pill," said he,
"And coated by machinery!"

"A patent pill it is, my boy—"—
There's many here about—
And really 'tis most wonderful
How well they turn them out.
Profit and credit, though," said he,
"Come not through them to you and me."

"Now tell us what you mean by that,"—
The sucking Liebig cries,
And that young errand-boy his broom
No more with vigour plies.
"Say why the sight of that small pill
Makes scorn and rage your bosom fill?"

"Because," said he, "in Eng'ish law
'Tis clearly specified,
Time and much money must be spent
Before we're qualified;
Whilst those who patent pills prepare
May tinkers be—Law does not care.

"Much fuss they make in Blooms'bry Square
With things not worth a pin,
But burning questions like this one
They take no interest in.
For all the good it's done for me
There might be no Society.

"And when a Warton's bold enough
To try and brave the storm,
A party-cry is raised, and then—
Good-bye to all reform."
"If that's the state of things," said Green,
"Some other trade I wish I'd been."

R. W. C.

Supplying Grocers.

To the Chemist and Druggist—

SIR,—I send you the enclosed advertisement from a local paper:—

"R. Parkinson & Sons, Chemists, Burnley, beg to state that not one of their drugs, as sold to grocers, contains either laudanum or any other dangerous ingredient. They are guaranteed perfectly safe to sell or use by anyone. Three hundred grocers in Sheffield sell Parkinsons' drugs, which are compounded with great care by practical chemists, and are thoroughly reliable.—ADVT."

It is so very interesting to find that in a town the size of Sheffield, with about 100 chemists and druggists, and where old-established businesses are being closed because customers cannot be found to purchase them, there are 300 grocers—customers of one firm—dealing in "thoroughly reliable and guaranteed drugs, compounded with great care by practical chemists," that you might deem it of sufficient importance to deserve publishing in the columns of your valuable journal, for the guidance of those eminent pharmacists who say that "drugs are gradually getting into the hands of the druggist, and that things are not so bad with us." Thing could surely never have been worse than this in the dark days before Pharmacy Acts were heard of.

I am, sir, yours respectfully,
137 Fitzwilliam Street, Sheffield, August 7. J. M. FURNESS.

58/190. A. B. S. says:—In your quotations from Hager's "Treatise" (page 322), it is stated that pills of ferri sulph. and soda bicarb. may be made by allowing the two salts to act upon one another, forming a semi-fluid mixture, which should then be made up secundum artem. My experience is that only ferri sulph. and sod. subcarb. will thus combine. Kindly state if I am in error. [There is no more difficulty in making these pills with soda bicarb. than there is with soda subcarb or potass. subcarb, if Dr. Hager's instructions, are attended to, and if the soda bicarb. is added in proper combining proportion to the ferri. sulph. Educational information will appear in our next issue.]

69/183. L. R. asks:—Can a firm of surgeons carry on a chemist's shop, not having their name on the facia-board, by means of a registered or non-registered manager? Section 1 of the Amending Pharmacy Act of 1869 provides that nothing contained in the first fifteen sections of the principal Act shall affect the business of any legally-qualified medical practitioner. This is understood to mean such an one may carry on a chemist's business with or without a registered manager. But it might be held that it was not a part of a doctor's business to call himself a chemist.

48/183. Norely might have read our article on page 343 of our last number. If any question arises out of that, we shall be glad to try to answer it.

43/189. The Refreshment Houses Act.—G. T. asks: Is it unlawful for a chemist and druggist to sell a bottle of lemonade or soda-water after 10 P.M., as it would be contrary to the Refreshment Houses' Act? And would a chemist and druggist be acting contrary to any law by selling a bottle of soda-water or lemonade on Sunday?

The Act referred to requires that a license should be taken for any premises "kept open for public refreshment, resort, and entertainment at any time between the hours of 9 P.M. and 5 A.M." A chemist may occasionally sell a bottle of lemonade or soda-water between those hours, but he would not usually be regarded as keeping his shop open "for public refreshment, resort, and entertainment." In July, 1876, we reported an Excise trial of some chemists in Tichborne Street, Haymarket, who were selling ice-cream soda at 3 A.M., and who were prosecuted by the Inland Revenue for not holding a refreshment license. The defence was that the business was a *bond-fide* chemists' business, but the magistrate considered that the defendants did keep open at night expressly for the sale of refreshments, and he therefore fined the so-called chemists. The sale of soda-water or lemonade on a Sunday is probably contrary to the Lord's Day Act of Charles II. That Act permits only works of necessity and charity; allows the sale of milk before 9 A.M. and after 4 P.M., and permits the sale of mackerel before and after Divine Service on Sundays. A penalty of 5s. may be enforced for infringements of this Act. Everyone knows that the Act is almost a dead letter.

178/48. Lavender.—Hibbert's Antiseptic was patented in January, 1866, by Wm. Hibbert, of Manchester. The patent has expired. The compound solution consisted of chloride of magnesium solution with bromine and zinc. Take chloride of magnesium solution at about 40° Twaddell, add from 1 oz. to 2 oz. of bromide to each gallon of the solution, and in some cases 5 to 10 per cent. of chloride of zinc. For adults the dose was 10 to 20 drops in a wineglass of water, for cattle 1 oz. to 2 oz. of the solution with 5 to 10 per cent. of chloride of zinc. Also used for moistening bandages as embrocation, and, with more chloride of zinc, as a disinfectant. The patent also covered the use of auxiliary lung respirators and other appliances for administering the compound in rinderpest.

188/10. Dispensing Difficulties.—"An Old Subscriber" has the following formula to make a clear solution of :—

Acid tannic	3ijj.
Spt. rosmarinii	3iss.
Tinct. cantharidis	3ijj.
Quinia	3ss.
Solve et adde	
Aq. rose ad	3xij.
Fiat lotio.	

From a theoretical point of view it is impossible to combine the whole of the ingredients to form a clear solution. Tannate of quinine is soluble to some extent in alcohol, but very sparingly so in cold water; in fact, tannic acid is used to *precipitate* alkaloids. We have tried the formula by various methods, and have no difficulty in getting a clear solution by leaving out the rose-water, and also with 6 instead of 30 grains of quinia, using the water; but in each case the compound was more of a varnish than a lotion, and threatened to crystallise on the slightest provocation. The formula is one of the class which reflect the ignorance of the prescriber, and give the dispenser more trouble than profit. Of course, after the quinia is thrown out the mixture might be filtered, but a rational way to do is to put in only 4 or 5 grains of quinia, the tannin and quinia being dissolved in separate portions of spirit, the latter being added gradually to the former, agitating constantly, and then the rose-water in the same way.

190/53. Ergotine Pills (3 gr.).—A "Constant Reader" makes these "by evaporating the extract, mixing it with magnesia, and rolling off." Thus made, they "draw damp." Magnesia is not an admissible excipient in any case, and is positively bad for ergotine. We make a very good pill with liquorice and tragacanth; from $\frac{1}{2}$ to $\frac{1}{4}$ grain of the latter, with liquorice powder q.s., is sufficient for each grain of ergotine. If the ergotine be very thin, it should be heated slightly in a water-bath, and the powders incorporated with it while warm. A good coating to prevent absorption of moisture is a solution of 1 part white wax in 20 of benzol, the powders being afterwards finished off with French chalk in the ordinary manner.

190/53. Microscope.—A "Constant Reader" who is studying medicine wishes to purchase a microscope which will be suitable both for student and professional work, price to be about 6*l*. There is no lack of first-class instruments in the market, the only difficulty being to choose between six and half a dozen. An instrument most extensively used by medical students is Hartnack's, the price of which is seven guineas. The body of this microscope is very strongly constructed on good principles, so that the many accessories may be added as required. Two eye-pieces and two objectives (a triplet of low powers and $\frac{1}{4}$ inch) accompany the instrument; these lenses are exceedingly good. Several small accessories such as stage, forceps, live-box, &c., are also given. We know several eminent microscopists who have used a Hartnack since their student-days, and have done most of their work therewith. Parkes, of Birmingham, sends out a very good 6*l*. instrument, having A and B eye-pieces, a $\frac{1}{4}$ inch and a duplex (1 inch and $\frac{1}{4}$ inch) objectives. (See papers on the microscope, C. & D. February & May, 1882.)

191/20. J. Oxford.—Liquor Quiniaæ (Amorphous).—The following is based on the tinctura chinoidini P. G.:—

Quinoidin sulphate (Howard's)	3j.
Water	3x.
Dissolve by the aid of a gentle heat, and, when cold, add—	
Rectified spirit	3ijj.
Filter and add—	
Glycerine	3ij.
Water, to..	3xx.

Dose, 3j. to 3ij. thrice daily.

The solution may be flavoured with tincture of fresh orange-peel if desired.

194/49. A Student.—Evanescing Ink.—Boil 10 grains of starch in 6 oz. of water for an hour, and, when cold, add 3ss. tr. iodi. This gives a violet ink, which should only be used with a quill pen. Writing done with it gradually fades; but we must remark that evanescent ink is unsatisfactory—chemically and socially—and always creates suspicion.

191/18. Mel.—Adulterated Honey.—It is understood that honey is sometimes adulterated with glucose syrup. This addition prevents the usual crystallisation, and, as glucose syrup generally contains unaltered starch, it may be detected by treatment with iodine. We readily detected 10 per cent. of glucose syrup by the following method:—Dissolve 2 fl. drachms of the honey in the same quantity of water, and add 1 oz. of methylated spirit, and mix. In the course of a few minutes a flocculent separates; if the honey contains glucose syrup this flocculent matter subsides within half an hour, leaving a clear solution above, but with pure honey the deposition occurs only in several hours.

190/54. Wave wishes a formula for effervescent powder which will give the maximum of effervescence with the minimum of tartaric acid. The only method we can suggest is to granulate the powder so that it may dissolve slowly and thus give prolonged effervescence. The following is a good formula :—

	Oz.
Tartaric acid	3 <i>j</i>
Bicarbonate of soda	4
Sugar	6 <i>l</i>

All dry and powdered. Mix well in a mortar, then transfer to a large porcelain basin and apply a gentle heat for half an hour, stirring well all the time, so that none of the powder may adhere to the basin.

32/191. Pharmacy.—Before you are admitted to the Minor examination, and therefore before you can be qualified as a chemist and druggist, you must sign a declaration that for three years you have been practically engaged in translating and dispensing prescriptions. This must be accompanied by a corresponding declaration from a pharmaceutical chemist chemist and druggist, or medical practitioner, or all three. Your best plan would be to seek an evening engagement in a chemist's shop, or as dispenser to a surgeon, for which you could probably get a small salary, at least after a short period during which you might have to give your services for nothing. There are no regular charges for such lessons, as it is not a usual method of study. Besides the three years' dispensing you will probably require further instruction before presenting yourself for examination. This can be obtained at any of the schools of pharmacy.

67/188. Camphor Pilules.—*July* asks for the method adopted for medicating camphor pilules. We shall be glad to receive special instructions from any of our homeopathic friends. In Messrs. Keene & Ashwell's "Companion to the Homoeopathic Pharmacopœia" we find the following :—
"Camphor Pilules.—Usually pilules about the size of a pea, well saturated with the spirits of camphor." In another paragraph we are told that Hahnemann's tincture of camphor was one in twelve; Dr. Quin used one in six; Dr. Rubini a saturated solution containing nearly 50 per cent. Apparently this saturated tincture would be regarded as mother tincture; 1 part of that with 9 parts of spirit would be 1*x*, and so on. The medication of pilules is described in the same work. Unmedicated pilules are put into a bottle with the required tincture. Either these are left to macerate, or the ascertained exact quantity of tincture is added to the pilules, and even absorption promoted by regular shaking.

191/23. R. T.—Blaine's "Outlines of the Veterinary Art." has been a very popular book. We believe that a new edition has been published within the last three or four years.

189/32. Browning for Gun-barrels.—In 1879 a correspondent sent us the following formula, used by the workmen at Enfield in the conversion of the old rifles into sniders, with the remark that the mixture used has as much relation to a fine colour as ink bears to a good handwriting:—

BROWNING FOR GUN-BARRELS.

	Oz.
Sweet spirit of nitre	1
Crude sulphur (sulphur cabbalum)	1
Tiniture of steel	2
Corrosive of sublimate	$\frac{1}{2}$
Copper sulphate	$\frac{1}{2}$
Nitric acid	1
Hydrochloric acid	1
Water	40

192/59. Alpha.—The persistent growth of seurf in hair and beard is the result of impaired general health. No local application will be satisfactory. You had better see a doctor, or take steps to improve your general health.

21/84. Ginger-beer Plant.—*W. B. C.* asks for information concerning this curious fungus. We have heard rumours of its existence, but have seen no particular description of it. It seems to have been introduced into this country, we believe from the West Indies, three or four years ago. "*W. B. C.*" tells as much as we know about it in his own letter. The substance used resembles tapioca. It is put into a bottle with water sugar, and ginger. After fermenting for 24 hours the liquid is converted into passable ginger-beer. The ferment meanwhile increases to about twice the original bulk, and the process may be continued indefinitely with ever-increasing quantities. It is, undoubtedly, a fungus like yeast and the better known vinegar plant.

192/59. *Inquirer.*—It has been officially announced that the General Medical Council wish to publish the new Pharmacopœia before the end of the year. It is doubtful if they will have it ready in time.

A correspondent, whose business must have been rather dull lately, has discovered what he is pleased to call "a reason" why we and the Pharmaceutical Council, or the trade generally and the Pharmaceutical Council, should work together harmoniously. He says he finds our title engraved on the heart of the Council, as evidenced by the following homœograph, as he curiously terms it:—

M. Car	—	eighe.
G. F. Sc	I	acht.
T. Gre	II	nish.
W. Chur	O	hill.
Walter	H	ills.
W.	E	Batt.
R. Ha	M	pson.
John W	—	lliams.
Charles S	ympes.	
T. P. Gos	—	ling.
S. R.	D	tkins.
Joh	N	Rroobins.
F. An	O	rews.
W. V. R	D	ley.
J. Bo	R	land.
J. R. Yo	C	ng.
W. D. Sava	G	e.
Geor	G	e S. Woolley.
P. W. Squ	—	re.
J. Richard	S	on.
A. Bo	—	tie.

68/191. *W. W.*—There are pharmacy laws in operation both in New York State and City. You would, no doubt, have to pass an examination before you could go into business, but with the English Minor certificate such examination would probably be more formal than it would be otherwise. There is no particular temptation for a chemists' assistant to go to America as such. See a paragraph in this number respecting one who, having experimented in that direction, tried to go a step farther with the aid of laudanum.

Patent Medicines.

Referring to the letter from "B" in our last issue, the proprietor of Stedman's teething powders writes:—"Patent medicine proprietors are indebted to you for your fair and dispassionate article on their productions, in your issue of July last; and I am especially so to your correspondent 'B' for the trouble he has taken in the case of June 7, last part. I can most positively assure him, and all whom it may concern, that my powders contain neither opium, morphia, nor any narcotic whatever. I only wish Mr. Coroner Thomas would make against me a definite charge to the effect that my teething powders do so contain a narcotic."

47/191. *R. A. F.* asks:—Can any of your readers say how it is accounted for in making ginger ale, that the higher the pressure at which it is bottled the less the pungency. Various makes of gingerine and capaçine have been tried with the same result? Does any chemical action set in between the gas and the vegetable resin?

34/207. *A. E. H.*—Oil of gaultheria (wintergreen) consists mainly of methyl salicylate, and is therapeutically useful in acute rheumatism, some practitioners preferring it to the artificial salicylic acid. Ten drops on sugar, given frequently, is the usual dose.

25/191. *Infus.*—The proportion of spirit in concentrated infusions should be not less than 10 per cent. The exposition of a placard announcing "teeth extracted" does not infringe the Dentists' or any other Act. Nor is the performance of the operation. All that the law prohibits is the assumption of the title "dentist" by an unregistered person.

192/22. *Insects in Parcels of Drugs.*—*Chemist* sends us some specimens of the small brown beetles which are so often found in parcels of drugs. He noticed them first in compound fennugreek powder, and they have spread to the shop-drawers, particularly cream of tartar and starch powder. He would be glad to know more about them, especially how to get rid of them. We hope some of our readers will send us something to the point.

The Chemist of the Future.

His brow is lofty, his form is divine,
His food is of nectar and century wine.
His shop—I beg pardon—his *Hall*, I should say,
Is built in a very artistic way.
The blending of gold and of delicate hues
'S entrancing, and such as an Irving might choose.
His garments are flowing—though money is not—
While of physics he talks, small physic is bought.
Like Gladstone, he's versed in political ill's;
For ills that are human he seldom sells pills.
But never for cash you'll find he so rash is,
While treating for *rash es* wishing the trash his.
Though he mixes a draught with a heav'n-born skill,
Forsooth the course *draughts* little "grist to the mill."
He compounds for grey locks, while logic, like Lock(e)'s,
Is hair'd by the patient with wondering looks.
He's well up in light, for *light* is his till
(It's sad that such merits the pockets don't fill).
He's also forensic, as learned in as salts,
He'll tell how to act if a man you as-sa(u)lts.
He flirts the Muse, in Milton-like verse;
(P'raps Byronic feet) jalap's bonus he'll rehearse.
In Pope's stately rhyme all his labels are made,
* * * * * But between me and you he is sick of the trade.

INSTANET.

Dode's Process for Platinising Glass.—A correspondent, who gives us no name or address, asks for particulars of this process. We have made some inquiry, but have not yet traced it. If any reader can supply it we shall be obliged. If our correspondent will again apply, giving us his name (not for publication) we will give the matter further attention.

269/8. *R.—Monsel's Salt.*—In September, 1857, M. E. Soubeiran published, in the *Journal Pharmacie et de Chimie*, an account of some experiments made by M. Monsel, pharmacien aide-major at the Military Hospital of Bordeaux. The salt prepared was a basic persulphate of iron, and ten parts of sulphuric acid at 60° were mixed with 100 parts of water heated to boiling. Ferrons sulphate was then added to the extent of 50 grammes. When solution is completed pour into the boiling liquid, a little at a time, 16 parts of nitric acid at 55°. When the disengagement of vapours has ceased add 50 parts of ferrons sulphate in powder. Finally, make up the solution to 100 parts with distilled water. By careful evaporation it can be obtained in reddish scales, like citrate or tartrate of iron. Experiments conducted at the time showed that it possessed greater power of coagulating the blood than any other known haemostatic. Its formula is $5(\text{SO}_4)_3(\text{Fe}_2\text{O}_3) + 4\text{Fe}_2\text{O}_3$.

43/191. *G. L. McC.* wants the formula for Atkinson & Barker's Rose Nipple Liniment; "J. A. H." would like the composition of Boehler's Metal Polish, also of Adshead's Bright Metal Paste; and "Xenopbon" (10/191) would like to know the address of the maker of bottles bearing the impress of a triangle at the bottom.

BUHACH.—The rapid advancement of the Buhach Producing and Manufacturing Company, from a small experimental enterprise to a concern of immense magnitude is worthy of notice. "Buhach," the plant whose flower produces this famous insecticide powder, is *pyrethra cinerariae folium*. The company own 1,400 acres of land at Atwater, of which 400 acres are devoted to Buhach. Buhach is useful for the destruction of flies or mosquitoes. To rid a chamber of the latter, it is only necessary to place a little of the powder on a coal-shovel or a piece of tin, and apply a match to it. It will burn slowly, like punk. The fumes are perfectly innocuous to human beings, though for a few minutes they may tickle the nasal or throat membrane, and cause sneezing or coughing. To rid a room of flies, it is only necessary to spread a little on their usual resting-places, such as window-ledges, picture-frames, gasfittings, &c., through a small bellows made for the purpose. The great consumption of Buhach, however, is in the orchards and vineyards.—*San Francisco Merchant.*

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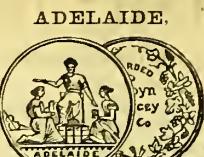
New York Medical Journal, 1880, Dr. F. WETR.

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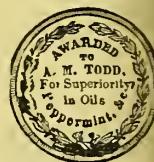
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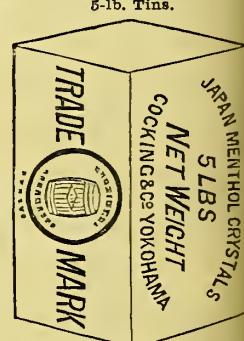
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To effect a reduction of temperature 3 to 5 grammes (45 to 75 grains) are sufficient, given in 3 doses hourly—2, 2, and 1 grammes (30, 30, and 15 grains)—for adults; 15 grains hourly for children.

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2/8.. Ditto ditto ..24/	4/6.. " Haquin ..30/	11/.. Laville's Gout Tincture ..90/	2/9.. Sirop ..27/				
2/9.. Aubergier's Syrup ..27/	4/6.. Matheyn Caylus ..28/	11/.. Pills ..90/	4/0.. Racahont ..10 6				
1/9.. Pâté ..16/	4/6.. Chassaigne's Wine ..38 6	2/3.. Papier Fayard ..13/6	4/6.. Reynal's Bougies ..42/				
6/6.. Bay Rum ..54/	2/9.. Pils ..24 6	1/14.. Ditto ..7/	2/9.. Ricord's Injection ..24/				
8/6.. Ditto ..27/	4/6.. Clin's Bromide Cam. Dragées 45/	4/.. Papier Fruneau ..27/	4/6.. " Capsules ..38/				
2/0.. Bellco's Charcoal ..14/	5/0.. Eau Botot ..38/	Ditto ..18/	8/0.. " Syrup ..72/; 2/9; 26/				
1/9.. Lozenge ..13/	3/0.. Ditto ..24/	1/9.. Pâté Anbergier ..14 6	1/6.. Star Paper ..12/				
4/6.. Blancard's Pills ..30/	2/6.. Espic's Cigarettes ..14/	2/0.. " de Berthé ..16/	2/9.. Vallet's Pills ..22/				
2/6.. Ditto ..18/	5/6.. Elixir de Coca ..48/	2/9.. " de Coca ..23/	1/9.. Ditto ..14 6				
4/6.. Brou's Injection ..27/	2/9.. Flon's Syrup ..23/	1/9.. " de George ..13/	4/6.. Veloutine (White, Pink, Yel.) 39,				
4/6.. Bugaud's Wine ..35/	2/0.. Gayetty's Paper ..16/	1/14.. Ditto ..8/	3/6.. Ditto ..ditto ..30/				
4/6.. Bully's Vinegar ..30/	2/3.. Granules Arsen. Acid ..15/	1/9.. " de Nafé ..13/	3/0.. Vichot's Trochisques ..32/				
2/6.. Ditto ..15/	2/3.. " Iron ..15/	1/9.. " Regnault ..13/	4/6.. Valentine's Meat Juice ..28				
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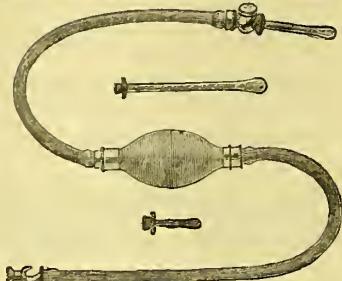
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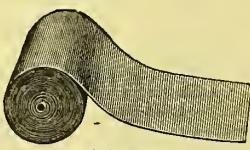
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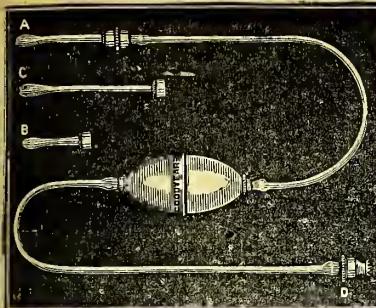
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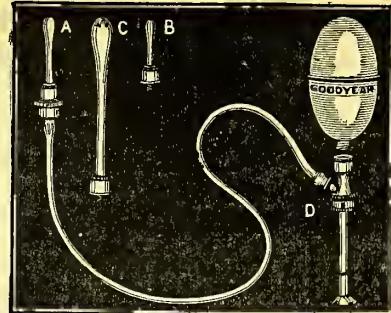


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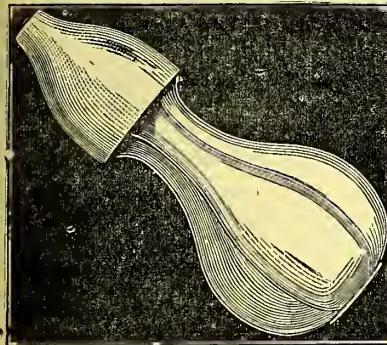
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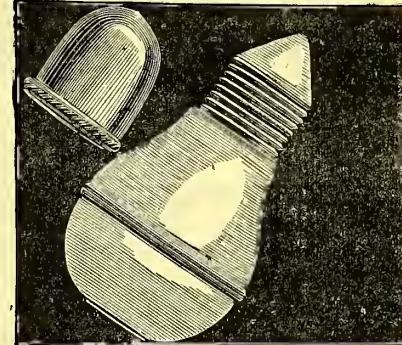


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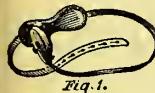
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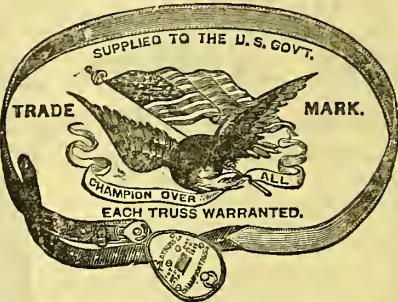
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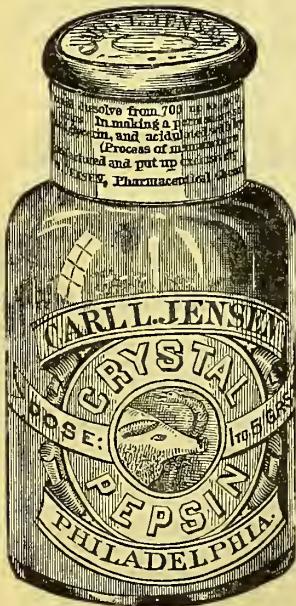
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Retail, 13½d. per box. Price (to agents only), 10s. per doz., less 25 per cent. off cash with order, 12½ per cent. at 1 month, 5 per cent. at 3 months.

Dr. Lennox Browne, of London, writes: "An ingenious idea, and without doubt a valuable medium."

SAMPLES FREE.



RELIEF FROM COUGH IN TEN MINUTES.

HAYMAN'S

BALSAM OF HOEHOUND

Is the most certain and SPEEDY REMEDY for all DISORDERS of the CHEST and LUNGS. In Asthma and Consumption, Bronchitis, Coughs, Influenza, Difficulty of Breathing, Spitting Blood, Whooping Cough, Hoarseness, Loss of Voice, &c., this Balsam gives instantaneous relief, and, if properly persevered with, scarcely ever fails to effect a rapid cure. It has now been tried for many years, has an established reputation, and many thousands have been benefited by its use.

IT HAS A MOST PLEASANT TASTE.

IMPORTANT TESTIMONIAL.—"AMPORT FIRS, ANDOVER, MAY 29, 1869.—Sir, I have for some years had your Balsam of Horehound for Mrs. B. Webster, and intended writing to tell you how much benefit she has derived. She was considered consumptive, but the Balsam has quite restored her, and she is now quite strong. I have recommended you dozens of customers, and all have been pleased with it.—I am, yours, &c., H. B. WEBSTER."

Mr. HAYMAN, Chemist."

Mr. HORROX, Chemist, Mildenhall, writes to say:—"One of my customers says your Balsam is worth sixpence a drop."



IN THE NURSERY, it is invaluable, as children are fond of it and take it eagerly. Immediately it is taken coughing ceases, restlessness is gone, and refreshing sleep ensues. No lady who has once tried it would ever afterwards be without it.

Prepared only by A. HAYMAN, Chemist, Neath; and sold by all Chemists. Price 1s. 1½d. and 2s. 9d. per Bottle.

WHOLESALE AGENTS.—W. Sutton & Co.; Barclay & Sons; Newbery & Sons; Hovenden & Sons, 95 City Road, London; Filton, Grimwade & Co., Melbourne; Elliott Brothers, Sydney and Brisbane, Australia; Kempthorne, Prosser & Co., Auckland and Dunedin, New Zealand; Smith, Stanisstreet & Co., Calcutta.

FOR THE USE OF INVALIDS AND ALL PERSONS AFFECTION IN THEIR LUNGS.

Dr. Wright's *(IMPROVED)* Pulmonic *(EUCALEYPTUS)* Candles.

"By these blessed candles of the night"—"Merchant of Venice," Act 5, Scene I.

The laboured respiration in Asthma, the harrassing Cough in Bronchitis, and all the distressing Symptoms in connection with diseases which affect the Chest and Lungs are speedily relieved.

The breathing passages become freed, and perfect respiration is soon re-established and maintained, in any room in which one (or more) of these Candles is kept burning.

The sufferer has but to light one of these Candles in the bedchamber before retiring, in order to ensure a thoroughly good night's rest

from the refreshing and agreeable, though invisible, vapour which it emits.

Overwhelming evidence of these facts is daily being given by the large and increasing numbers of patients who use them.

As to the medicinal and wholesome properties, as well as to the purity of the various substances which enter into the composition of these invaluable Candles, and especially as to their effectual agency to produce a healthy atmosphere in rooms

unusually strong testimony is afforded by the reports of Professors ATTFIELD, STODDART, HEISCH, Dr. PHIPSON, and other eminent Medical and Chemical Authorities; whilst the "Lancet," "British Medical Journal," "Medical Times and Gazette," as well as the other organs of the profession highly extol their virtues, and recommend their use.

Read the Published Testimonials.

DR. WRIGHT'S PULMONIC CANDLES.

TO BE HAD OF ALL CHEMISTS, PRICE 2s. 6d. PER BOX.

WHOLESALE ONLY FROM THE MANUFACTURERS, Messrs. J. C. & J. FIELD,
UPPER MARSH, LAMBETH, LONDON, S.E.

DR. LALOR'S PHOSPHODYNE

The ONLY MEDICINE of the KIND AWARDED A CERTIFICATE of MERIT at the CALCUTTA INTERNATIONAL EXHIBITION, 1883-4,
AND THE ONLY TRADE MARK—PHOSPHODYNE—REGISTERED UNDER THE TRADE MARKS ACT.

DR. LALOR'S PHOSPHODYNE

Will keep in any Climate, and is therefore specially adapted for SHIPPING, and wherever introduced COMMANDS A LARGE SALE.

Dr. LALOR'S PHOSPHODYNE, from its immediate effects in cases of Exhaustion, Lassitude, Stomach and Liver Complaints, Urinary and Kidney Difficulties, Want of Stamina, Nervous Debility, and Malarial Diseases, HAS ATTAINED A VERY LARGE SALE in Africa, China, East and West Indies, the Colonies, Turkey, Asia, and other Hot Climates.

DR. LALOR'S PHOSPHODYNE has become a Household Necessity in every nation and country in the World. Unequalled as a Brain and Nerve Food Highly recommended by the élite of the Medical Profession for Dyspepsia, Mental and Physical Exhaustion, Nervousness, Wakefulness, Diminished Vitality, &c.

DR. LALOR'S PHOSPHODYNE makes an agreeable Beverage with Water Only. INVIGORATING and VITALISING the BLOOD with the PHOSPHORIC or active Principle of Life.

Sold in Bottles, at 4s. 6d. and 11s., by all Wholesale and Retail Medicine Vendors throughout the World. Manufactured only at Dr. Lalor's Phosphodyne Laboratory, South Hill Park Road, Hampstead, London, N.W.

A supply of suitable Printed Matter in any Language for distribution, also attractive Show Cards, will be sent for Enclosure to any London House or receipt of a Letter of Advice from Agents.

KING'S HOP BITTERS

(THE KING OF PICK-ME-UPS)

Are old-established, registered, and protected under the Trade Marks Act, as having been prepared before August, 1875. They are an excellent aromatic tonic, palatable, and command a good sale. Put up in bottles to retail at 1½ and 2/3 per bottle, also in packets containing ingredients for making the same at 7d. and 1½ per packet.

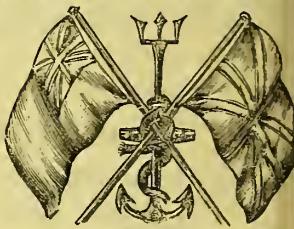
Show Tablets and Counter Bills with testimonials supplied. Each Bottle and Packet bear, as Trade Marks, "King Alfred's Head" and "British Flags." Beware of Infringements.

MANUFACTURED ONLY AT

King's Hop Bitter Depot, Croydon.

Special agents appointed in all parts. More wanted for unrepresented localities. Obtainable direct from ALFRED KING & CO., who will forward all particulars on application.

London Agents, Messrs, Newbery & Son, 1 King Edward St., Newgate St., E.C.



IMPORTANT TRADE NOTICE RESPECTING

TOWLE'S CHLORODYNE

The Original Preparation, as approved by the Medical Profession on account of its known composition and uniform strength.

Retail at 13½d., 2s. 9d., 4s. 6d., and 11s.

We beg to inform our numerous customers, and the Trade generally, that we are WITHDRAWING THE 4-OZ. AND 10-OZ. DISPENSING sizes, and, instead, are putting up AN 11s. RETAIL SIZE. The wholesale price of the 4s. 6d. and 11s. will be at the same rate per oz. as the old 4-oz. and 10-oz. We shall still continue the undermentioned as usual.

LIQ CHLORODYNII

As originally introduced by A. P. Towle, and free from stamp duty for dispensing. 4 ozs., 4s.; ½ lb., 5s. 6d.; 1 lb., 10s. Also in quantities of 6 lbs. and upwards at special quotations.

TOWLE'S CHLORODYNE LOZENGES AND JUJUBES

In 1, 2, and 4 lb. bottles, at 3s. per lb., and 6d. and 1s. boxes. Foiled, lined, and neatly got up for the counter, 4s. 6d. and 9s. per doz. Quantities of 7 lbs. of Lozenges and upwards stamped with chemist's own name free of charge.

A. P. TOWLE, Chlorodyne Manufacturer,
75 BACK PICCADILLY, MANCHESTER.

Show Cards and Bills with name on application with instructions for forwarding.

THE BEST MEDIUM FOR TAKING NAUSEOUS MEDICINES—COD LIVER OIL, CASTOR OIL SANTAL WOOD, &c.

See HEALTH EXHIBITION, WEST CENTRAL GALLERY.

TRADE MARK.



FRANÇOIS CHEVALIER.

TRADE MARK.



FRANÇOIS CHEVALIER.

IMMENSE SUCCESS

OF

CHEVALIER & CO.'S

MEDICINE SOLUBLES. FLEXIBLE—SWEET.

THESE Solubles are infinitely superior to the ordinary rigid Capsules, inasmuch as they are flexible, and accommodate themselves alike to the throats of children as well as of adults.

Being sweet and pleasantly flavoured, the most nauseous medicines may be taken by the aid of a little water without inconvenience, the Solubles readily assimilating themselves to the contents of the stomach, and leaving no disagreeable taste in the mouth or odour to the breath after being taken.

A larger quantity of Cod Liver Oil, Castor Oil, or other nauseous medicines can be taken in one Soluble than by the old rigid form of Capsule.

Only the very finest qualities of Medicines and Medicinal Oils are allowed to be used in their manufacture, or administered through the medium of Chevalier's Solubles.

The Solubles are made in six sizes :

No. 1 contains about 12 drops (10 min.) No. 4 contains about 45 drops (40 min.)

No. 2 contains about 25 drops (18 min.) No. 5 contains about 60 drops (55 min.)

No. 3 contains about 35 drops (30 min.) No. 6 contains about 80 drops (65 min.)

The Cod Liver Oil Solubles contain one ordinary dose in a single Soluble, whereas it requires 10 to 15 of the ordinary rigid Capsules before a single dose can be administered. Three of Chevalier's Castor Oil Solubles contain sufficient for an adult dose. Hitherto it has been almost impossible to administer this medicine by the ordinary rigid Capsules.

Office: 17 BARTHOLOMEW CLOSE, LONDON, E.C.

Trade Notice.]



[Trade Notice.

ATKINSON & BARKER'S ROYAL INFANTS' PRESERVATIVE.

Established by 90 years' experience as a safe and effective Medicine.

Sold universally by Chemists and Patent Medicine Dealers.
 WHOLESALE AND EXPORT ORDERS SUPPLIED FROM THE MANUFACTORY—
 11 RUSSELL STREET, DOWNING STREET, MANCHESTER.
 SHOW CARDS AND BILLS ON APPLICATION.

“FOR THE BLOOD IS THE LIFE.”

CLARKE'S WORLD FAMED BLOOD MIXTURE,

The Great BLOOD PURIFIER and RESTORER.

(Registered Trade Mark—"BLOOD MIXTURE.")

The Celebrated CURE FOR Scrofula, Scurvy, Blood and Skin Diseases, and Sores of all kinds.

Wholesale of all the Wholesale Houses, at 24s. and 108s. per dozen, less the usual discount.

Sole Proprietors, THE LINCOLN & MIDLAND COUNTIES' DRUG COMPANY, LINCOLN.

Counter Bills and Posters, with Name and Address, also Show Cards, on application. Printed matter supplied in any Language for Foreign Agents.

CAUTION.—The Proprietors will take immediate proceedings against all persons pirating their Trade Mark, "Blood Mixture," Labels, Wrappers, &c., or Advertisements, or in any way infringing their rights.

W. F. SMITH'S TASTELESS DANDELION ANTIBILIOUS PILLS,

Price, 1s. 1½d. and 2s. 9d. per Box.

Registered.] TARAX. AND PODOPH. [Registered.

A NON-MERCURIAL LIVER MEDICINE, specially useful to the habitually constipated, and safe for all ages.

Special caution needed against injurious imitations. Worthy of trade notice. Reliable, and rapidly increasing in public acceptance.

PREPARED ONLY BY

W. F. SMITH, M.P.S.,
280 WALWORTH ROAD, LONDON.

To be had of the usual Houses at Home and Abroad.

THE RED CROSS CAPSULES,

IN BOXES, 1/- EACH,

Are warranted to contain pure Balsam Copaiha, and are made with Flexible Gelatine; also

THE RED CROSS PACKET,

PRICE 4/6,

The greatest cure for Urinary Ailments.

These Medicines being advertised in over 500 Newspapers, Chemists and Patent Medicine Dealers are advised to keep them in Stock. Registered at Stationers' Hall by the Proprietors,

G. TURLEY & CO.,
Manufacturing Chemists, BIRMINGHAM.

Proprietors of Dr. Watson's Pulmonine Lozenges, in Boxes, 1/1½ each.
 PROPRIETARY CAPSULES, of any description, made to order for Druggists or Shippers.

DINNEFORD'S FLUID MAGNESIA.



PERFECT IN PURITY AND UNIFORM IN STRENGTH.

Sold by all Wholesale Druggists, and by the Manufacturers,

DINNEFORD & CO.,
Pharmaceutical Chemists,
180 NEW BOND STREET, LONDON.

HOLLOWAYS PILLS & OINTMENT

Have the Largest Sale of any Medicine in the World.

MANUFACTURED ONLY AT
 Professor HOLLOWAY'S Establishment,
 78 New Oxford St. (late 533 Oxford St.), London.
 And sold at 1s. 1½d., 2s. 9d., 4s. 6d., 11s., 22s., and 33s. each Box or Pot.

Chemists and Druggists selling "Holloway's Pills and Ointment" can, on application to the above address, or to the Wholesale House with whom they deal, be supplied free of charge with Handbills and Posters with their name and address printed at foot.

Wholesale Terms see List of "Proprietary Articles" in most Price Currents.

INDEX TO ADVERTISEMENTS,

Pages 39 and 40.

A WONDERFUL MEDICINE!

Between thirty and forty years ago a Medicine was introduced to the public, and suffering humanity was invited to try the same.

The Proprietor knew from experience that success was certain, but the human breast is so imbued with prejudice, that it forms one of the strongest barriers to break down and the greatest enemy to overcome before any headway can be made towards the mansion of success. Truth has often proved itself to be "stranger than fiction," and it is a fact as solid as truth that



TRADE MARK.
No. 1416.

BEECHAM'S PILLS

have now become one of the leading Patent Medicines of the present day. From north to south, and from east to west, they are to be found in the homes of the rich and the poor. All classes of society use them, and they are by thousands declared to be

WORTH A GUINEA A BOX.

For a Weak Stomach, Impaired Digestion, and all Disorders of the Liver, they act like "MAGIC," and a few doses will be found to work wonders on the most important organs in the human machine. They strengthen the whole muscular system, restore the long-lost complexion, bring back the keen edge of appetite, and arouse into action, with the ROSE-BUD of health, the whole physical energy of the human frame. These are "FACTS" admitted by thousands, embracing all classes of Society, and one of the best guarantees to the Nervous and Debilitated is, BEECHAM'S PILLS have the LARGEST SALE of any Patent Medicine in England.

In South Africa BEECHAM'S PILLS have the largest sale of any Patent Medicine ever introduced into that part of the World.

All Patent Medicine Dealers abroad will find BEECHAM'S PILLS one of the most profitable and one of the best selling articles in the Market. The demand for them is regular, and all Foreign Houses who are desirous of getting a First-class Patent Medicine are respectfully requested to get BEECHAM'S PILLS from the leading Wholesale Houses in England (as no business will be done with any Foreign House by the Proprietor direct).

CAUTION.—The Public are requested to notice that the words "BEECHAM'S PILLS, ST. HELENS," are on the Government Stamp affixed to each Box of the Pills; if not on, they are a Forgery.

Prepared only, and Sold Wholesale and Retail, by the Proprietor,

**THOMAS BEECHAM,
ST. HELENS, LANCASHIRE, ENGLAND.**

In Boxes, 1s. 1½d. and 2s. 9d. each.

N.B.—FULL DIRECTIONS ARE GIVEN WITH EACH BOX.

EXTENSION OF TIME.

An Attractive Present.—We will send any Chemist or Medicine Vendor who purchases one gross of 2s. Gordon's Extract subsequent to May 15th, 1884, and prior to March 31st, 1885, an attractive present of the guaranteed retail value of one guinea, free of all cost.

Two or many Lots.—The Extract can be bought from ourselves for cash in not more than two lots or from any wholesale house in any number of lots. Exceptions to this offer are the wholesale houses, and the chemists and medicine vendors whose names we print, as selling our goods, in the pamphlets we ourselves distribute from house to house, in towns of over 20,000 inhabitants, or whom we supply with goods on "Sale or Return."

We guarantee the sale of "Gordon's Extract." We are putting out a series of four millions (4,000,000) handsome illustrated 36-page summer almanacks, and contemplate extending same by an additional two millions (2,000,000). This we shall supplement by greatly increased and continuous newspaper advertising. We purpose spending £15,000 or more in advertising Gordon's Extract during the year ending June 30, 1885.

No Risk of Loss.—We will take back Gordon's Extract at cost price, three months after date of purchase, bought from ourselves and found to be unsaleable, if any, from any wholesale or retail house, and also authorise the wholesale houses to take back Gordon's Extract from their customers on the same conditions. There is no risk of loss in stocking Gordon's Extract.

Wholesale Houses.—We do not care to supply direct less than six dozen bottles of Gordon's Extract, but lots of a quarter-dozen to parcels of any magnitude can be bought from any of the large London or provincial houses on terms and prices to be obtained from them.

Pamphlets for circulation among customers, and printed with name and address, sent free of charge and carriage paid.

Dr. J. COLLIS BROWNE'S CHLORODYNE. THE ORIGINAL AND ONLY GENUINE.

IMPORTANT CAUTIONS

From Lord Chancellor SELBORNE, Vice-Chancellor Sir W. PAGE WOOD,
and the LORDS JUSTICES OF APPEAL.

VICE-CHANCELLOR SIR W. PAGE WOOD, by whom the suit in Chancery was first heard, stated in his judgment that Dr. J. Collis Browne was undoubtedly the Inventor of Chlorodyne, that the whole story of the Defendant Freeman was as deliberately untrue as the falsehood he had deposited with reference to the use of his Chlorodyne in the Hospital.

The VICE-CHANCELLOR also stated, 'that Chlorodyne was a fanciful name, and had application been made sooner, the Court would have given Dr. Browne protection.'

LORD CHANCELLOR SELBORNE coincided with the judgment of the Vice-Chancellor upon this point, and stated 'that had application been made at a proper time and place, the Court would have found means to restrain the Defendant from misrepresenting the decision of the Vice-Chancellor.'

LORD JUSTICE JAMES, on appeal, stated in his judgment, 'that the Defendant Freeman had made a deliberate misrepresentation of the decision of Vice-Chancellor Wood.'

It was proved in Court, on affidavit by Mrs. Forbes, of Paris, that the testimonial published in the *Times*, November 14th, 1865, speaking of the great efficacy of Chlorodyne in Cholera, referred to Dr. J. Collis Browne's Chlorodyne, and that she never used any other, that she had written to the Defendant Freeman to that effect; notwithstanding which notice the Defendant publishes the said testimonial as referring to his medicine.

The Editor of the *Medical Times*, in his report on Chlorodyne, January 13th, 1866, gives information that the Chlorodyne referred to was the medicine introduced by a retired Army Medical Officer, which was Dr. J. Collis Browne; still this is published by the Defendant as testimony to his medicine.

Numerous affidavits from eminent Physicians and others were produced in Court, stating that Dr. J. Collis Browne was the inventor of Chlorodyne, and that when prescribing they mean no other.

The Defendant himself publishes that his compound is in effect and composition quite different to any other preparation; nevertheless he assumes the name, testimonials, &c., of Chlorodyne.

Technicalities in law prevent that protection which the public should justly have against such a course of conduct. It is now incumbent on all who purchase Chlorodyne to see that the name, 'Dr. J. Collis Browne's Chlorodyne,' is engraved on the Government Stamp, as it is not sold otherwise. All other compounds under the name of Chlorodyne are spurious. All attempts at analysis have failed; hence the statement that the constituents of Chlorodyne are known is a misrepresentation.

ORIGINAL AND



FURTHER IMPORTANT NOTICE.

The subjoined list of eminent Firms concur with Vice-Chancellor Sir W. Page Wood's statement in Court, that Dr. Collis Browne was undoubtedly the Inventor of Chlorodyne; and that when Chlorodyne, or the Original Chlorodyne, is ordered, they invariably supply Dr. J. Collis Browne's:

Apothecaries' Hall,	London	Frazer & Green,	Glasgow	Morson, T., & Son,	London
Allen, Hanbury & Co.,	"	Gale & Co.,	London	Newbery & Sons,	London
Baiss Brothers,	"	Giles & Son,	Clifton	Oldham, G., & Co.,	Dublin
Banks & Richards,	Birmingham	Goulding, Messrs.	Cork	Parsons & Richardson,	Leicester
Barron, Harvey & Co.,	London	Grattan & Co.,	Belfast	Peake, Allen & Co.,	Dublin
Bell, John, & Co.,	"	Grimwade, Ridley,	London	Raines & Co.,	Liverpool
Bourne & Taylor,	"	Grindley & Son,	Chester	Raines & Co.,	York
Corbyn & Co.,	"	Hearon, Squire & Francis,	London	Raines, Blanshards & Co.,	Edinburgh
Cox & Gould,	"	Hodgkinson, Tonge & Stead,	"	Sang & Barker,	"
Curling & Co.,	"	Hopkins & Williams,	"	Sanger, J., & Sons,	London
Curtis & Co.,	"	Hovenden, R., & Sons,	"	Sim, James, & Co.,	Aberdeen
Davy, M'Murdo & Co.,	"	Hunt & Co.,	Exeter	Smeeton, W.,	Leeds
Dobbin, W., & Co.,	Belfast	Hunt, A., & Co.,	"	Southall Co.,	Birmingham
Drew, Barron & Co.,	London	Johnson, A. H. & S.,	Liverpool	Sutton, W., & Co.,	London
Drew, B., & Alexander,	"	Langton, W., & Co.,	London	Tomlinson, Hayward & Co.,	Lincoln
Dunn & Company,	"	Lynch & Co.,	"	Treacher, Hodgkinson & Co.,	"
Edwards, W.,	"	Mander, Weaver,	Wolverhampton	Westrup, J. B.,	Kensington
Evans, Gadd & Co.,	Exeter	Marsden & Sons,	London	Westwood & Hopkins,	Lincoln
Evans, Lecher & Evans,	London	Maw & Son,	"	Woolley, James,	Manchester
Ferris & Co.,	Bristol	Meggesson & Co.,	"	Wyley & Brown,	Coventry
Foulger, S. & Son,	London	Mackay, John, & Co.,	Edinburgh	Yates & Co.,	London

After these public statements in a Court of Equity, and subsequent confirmation by the trade at large, no Chemist can conscientiously use or sell any other compound for Chlorodyne without committing a breach of faith, unjust to patient and physician. The value of the remedy alone creates the great demand.

Sold in Bottles—1s. 1d., 2s. 9d., 4s. 6d., and 11s. Usual Discount to the Profession.

SOLE MANUFACTURER,

J. T. DAVENPORT, Pharmaceutist,

88 GREAT RUSSELL STREET, BLOOMSBURY SQUARE, LONDON.

HOCKIN'S EUCALYPTUS AND MENTHOL PENCILS,

One dozen on a card. Retail Price, 1/1½. Wholesale Price, 7/- per doz.

THE "ACME" BRAND MENTHOL CONES,

(Made from Cocking's Pure Japan Menthol),

IN TURNED WOOD BOXES. PRICE 5/- DOZEN NETT.

MANUFACTURED ONLY BY

HOCKIN, WILSON & CO., 38 Duke Street, Manchester Square, W.

SPECIAL QUOTATIONS TO LARGE BUYERS.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



DOLRU NEURALGIA'S DEATH-BLOW.

MAGIC DEATH TO ALL PAIN.

"DOLRU" is a certain Cure for SPASMS, CRAMPS, DIARRHEA, &c. DOSE—A Teaspoonful every ten minutes.

"DOLRU" is the most reliable remedy for the PREVENTION and CURE of CHOLERA. DOSE—A Teaspoonful every five minutes.

This new compound, "DOLRU," entirely cures NEURALGIA and TOOTHACHE in a few minutes. The Proprietor will Challenge the World to produce a genuine case of NEURALGIA in the head or face, or TOOTHACHE that cannot be cured by "DOLRU" when used as instructed in the circular accompanying each bottle. "DOLRU" also cures RHEUMATISM, GOUT, SCIATICA, and LUMBAGO, in a few hours. Use "DOLRU" only, you will then soon be cured. "DOLRU" strengthens the nerves exceedingly, and is perfectly harmless. Persons of the most delicate constitutions can use it without the least hesitation.

"DOLRU" can be obtained wholesale and retail of the Patentee and Manufacturer, HENRY FRANCIS MILLS, 30 St. Anne's Road, Notting Hill, London, W.; and of the leading Wholesale Chemists and Medicine Vendors. Sold in bottles at 1s. 1d. and 2s. 9d. each.

HENRY FRANCIS MILLS,

Sole Patentee of "Dolru" for England and the United States of America.

PURE MENTHOL CONES,

A REMEDY FOR

HEADACHE, NEURALGIA, RHEUMATISM, &c.

SPECIALITY BOXES.

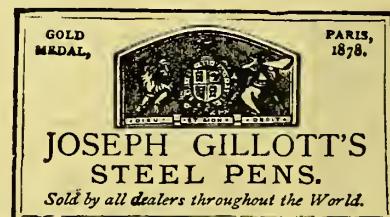
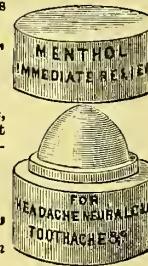
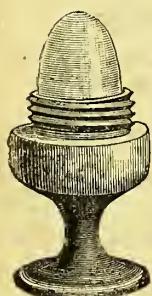
The lids remove, and the box serves as a holder for the Cone.

In Fancy Hardwood Boxes, 9s. per dozen.

In Plain Willow Boxes, 4s. 6d. per dozen.

Our Menthol Cones, being pure, without any admixture, are exempt from the Act, and can be sold without a Patent Medicine Stamp. Show Cards and Counter Bills on application.

T. CHRISTY & CO.,
155, F.P.C. CHURCH ST., LONDON,
Proprietors of Myocom Fly Gum, in
Tins, at 1s., 2s. 6d., and 5s.



**JOSEPH GILLOTT'S
STEEL PENS.**

Sold by all dealers throughout the World.

DENOUAL'S MEDICINAL CAPSULES ARE THE BEST AND CHEAPEST.

Attention is called to the following Articles:—

	Trade Price.	Retail.
Peruvian Mixture Capsules	12/-	9/-
Matico Oil and Copalba Capsules	12/-	8/-
Santal Oil Capsules (36 in each box)	25/-	4/- to 6/-
Cnbab Oil and Copalba Capsules	18/-	3/- to 2/-
Copalba, Cnbab Oil, and Santal Oil Capsules	18/-	4/- to 4/-
Copalba Capsules, No. 0.....	7/-	1/-
" No. 1.....	6/-	1/-
" No. 2.....	6/-	1/-
Copalba, Alum and Cubebe	7/-	2/-
Compound Ferruginous	7/-	2/-
Male Fern Oil	13/-	8/-
Cod Liver Oil	6/-	1/-
Cubebe Oil Capsules	25/-	4/- to 6/-
Castor Oil	6/-	1/-
Denonal's Injection (to ensure a radical cure in two days).....	18/-	2/-

ALL DRUGS WARRANTED TO BE GENUINE.

Jules Denoual, Carlton House, 4 New Cross Rd., London, S.E.

EVANS'S EXTRACT OF MALT.

Strongly Recommended in Asthma, Bronchitis, Consumption, Atrophy, Indigestion, and in Stomach Coughs.

(See Report of Professor Attfield, Ph.D., F.C.S., Professor of Chemistry to the Phar. Soc. of Great Britain.)

Nov. 1873.—"EVANS'S EXTRACT is incomparably more valuable than any preparation of Malt hitherto offered to the public."

EVANS'S STYPTIC.

The introduction of this Preparation to the notice of the Profession for every variety of bleeding arose from the desire expressed by several eminent Physicians and many patients to obtain an efficient Styptic at a moderate price.—Ruspin's celebrated Styptic being so costly.

P. C. STYLY, M.D., *Surgeon to the Health Hospital*, writes:—"I find it of the greatest service, in every instance was equal, if not superior, to Ruspin's Styptic."

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TIKHEEL,

The New Remedy for Neuralgia, Tic, Toothache, Nervous and Sick Headache.

ONE SIZE ONLY—HALF-A-CROWN.

Price 24/- per dozen, subject to usual Patent Medicine discount. Per gross, £11 8s., net cash, carriage paid, box free. Export Tin-lined Cases charged 5/- each, delivered f.o.b. Remittance in full must accompany order. For less than One Gross buyers will please write their Patent Medicine House or Wholesale Druggist.

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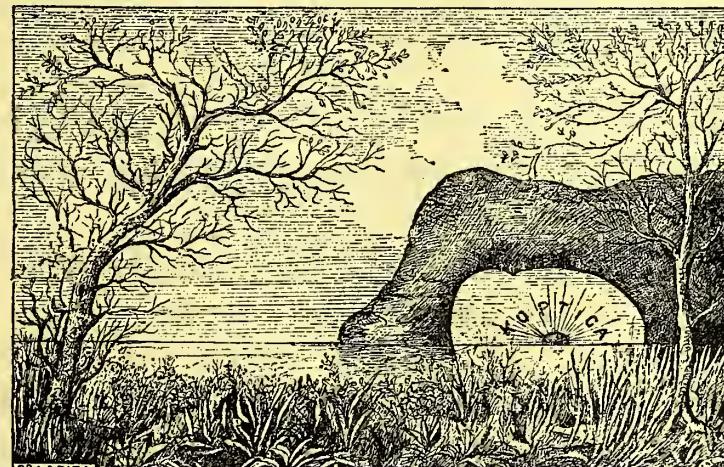
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See Extraordinary Testimony relating to Marvellous cure of ACUTE RHEUMATIC FEVER.
(the patient having suffered intense agony) from HAROLD DE F. COX, Esq., of Great Misenden Abbey, Bucks, and 17 South Audley St., Mayfair, W. (son of the late Mr. Serjeant E. W. Cox, Barrister-at-Law and Chairman of the Middlesex Sessions).

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Rev. B. SPANNUS
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Guaranteed entirely free from all injurious drugs and perfectly harmless. Can be taken with the greatest confidence by the oldest, youngest, or most delicate, and permanently cured, even after thirteen or twenty years of semi-helplessness and suffering, and the disease driven from the system, by



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HIGHLY RECOMMENDED by the MEDICAL PROFESSION. Prepared in the form of a Poultice, reduces very incisive, and may easily be carried in the pocket. The silver measure full contains one dose which is taken four times a day, well dissolved in half a wineglass of cold water. KOPTICA assists digestion.

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Wholesale and Export Druggists and Manufacturing Chemists,
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Offer great advantages to Colonial Buyers and others. Shippers will do well to send for Price List.
Exclusive Agents for Dr. CARL L. JENSEN'S Crystal Pepsine, Beef Peptone, and Beef Peptone with Rock Candy.

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MANUFACTURERS OF ALL DESCRIPTIONS OF PHARMACEUTICAL PREPARATIONS,
Beg to inform Merchants, Shippers, &c., that all Indents entrusted to them will receive careful attention and prompt execution.

Messrs. B., S. & Co. request the attention of their friends and the Trade, at home and abroad, to their having PURCHASED THE BUSINESS of Messrs. JAMES BASS & SONS, Hatton Garden, and with it the various Formulae from which their Special Preparations have been made, and pledge themselves to supply them in all their integrity.

Specimens of these Preparations have remained in the Museum of Kew Gardens during 23 years without deterioration.

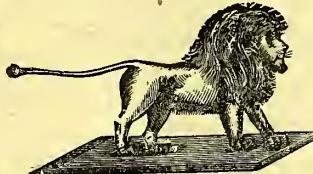
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E. BURGESS' LION OINTMENT & PILLS

Cure the worst and most obstinate cases of Ulcers, Abscesses, Cancers, Tumours, Polypi, Carbuncles, Piles, Poisoned Wounds of all kinds (including Dog and Venomous Bites), and every form of Eruption and Skin Disease; also Ulcerated and Cancerous Affections peculiar to Females, without the aid of Lancet or Knife. Numbers have been cured after leaving various London Hospitals as incurable, or curable only by amputation.

The following are specimens of Testimonials received. A list of over sixty, each bearing full name and address, is wrapped round each box.

ERSKINE HOUSE, NEAR TIDAL BASIN, VICTORIA DOCKS: Dec. 31, 1883.

DEAR SIR.—I beg to inform you I have not a spot about me, and I believe you are an instrument in the Almighty's hands to do a world of good for your fellow creatures. Anyone to have seen me this time twelve months ago would say I was the greatest scab-eater, mole-skinned, &c., I have had shots on me for about forty years, have taken medicine of every description, baths, &c., &c., until November, 1882, and nothing ever could touch it. I was then recommended to use the Lion Ointment and Pills as a certain cure, and I found them the masterpiece of the world. I have consulted great men, and they could not touch it. People must not be afraid of using the Lion Ointment; the more it pinches them the more it is drawing the disease out—only persevere, and the Lion Ointment and Pills will do their work. Now, God bless you in your undertaking.—From yours faithfully,

MR. BURGESS.

SILVESTER STONEHOUSE STUART.

ALMA ROAD, next door to EAST HILL HOTEL, WANDSWORTH, late 2 BOLTON ROAD, GROVE PARK, CHISWICK, MIDDLESEX: February 7, 1883.

DEAR SIR.—I am happy to forward to you the following testimonial of the great value of your Lion Ointment and Pills. Through the ill-treatment of my husband I have been suffering with poisoned blood, and, in consequence, a large abscess formed in my neck, also syphils affecting my leg. I have, too, been suffering many years from a diseased hip. I consulted several physicians, who said that I should not recover unless I had the bone taken out. Last May, 1882, I was advised to use your Lion Ointment and Pills; by so doing I can scarcely describe the benefit I received in a very short time, and I am happy to tell you that they saved my life, and I am now perfectly cured. Hoping through my case your wonderful Ointment and Pills may get well known for the benefit of my poor fellow-creatures. You are at liberty to refer anyone to me at any time should you wish.

I am, Sir, yours respectfully, ELIZABETH STILLWELL.

To MR. E. BURGESS.

PROSPECT HOUSE, AMERSHAM COMMON: June 25, 1881.
SIR.—Please send me by return one box of your Pills. The box of Lion Ointment I sent for is for Erysipelas in the face; do you think it suitable? [Most effectual.] Also send me another box of the Lion Ointment. I have enclosed stamps for the same. I have had Ointment from you before through a friend of mine. I had been suffering from a small tumour in the head for some years, and had the advice of medical men, and all said I must have it taken out; but, on applying your Ointment, in a fortnight it drew it out and made a complete cure of it.—Yours respectfully,

TO MR. E. BURGESS.

MRS. E. HILL.

Various Cancers, Tumours, Diseased Bones, &c., extracted by the LION OINTMENT AND PILLS; also Photographs of Cases Cured are on view at 117 High Holborn. A guarantee of their virtue.

A good sale for this remedy always follows its introduction by proof of its efficacy. Foreign Houses will do well to order samples through their English agents, also supplies of Bills, PHOTOGRAPHS OF CASES CURED, &c., which ALWAYS ensure a connection.

The Ointment is put up in air-tight, grease-proof boxes, and will keep good any length of time in any climate. The Pills are in stout wooden boxes, and also retain their virtue for years. Prices, 1s. 1½d., 2s. 9d., 4s. 6d., 1s., and 22s. each.

USUAL WHOLESALE TERMS.

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117 HIGH HOLBORN, and KINGSGATE ST., LONDON, W.C.
Late WANDSWORTH, S.W.

ELM LODGE, WIMBLETON PARK, late 26 BALLANTINE STREET, YORK R

WANDSWORTH: January 17, 1881.

DEAR SIR.—Having attended St. Thomas's Hospital for nine months, suffering greatly with a *tumour*, extending from the back of the ear to the collar bone, affecting the shoulder, and receiving not the least ben-fit, I was earnestly persuaded to give your Lion Ointment a trial. By so doing I can scarcely describe the benefit I received in a very short time. I am truly thankful to state I am quite w'll and am able to resume my duties without trouble or inconvenience. I was also at ended by several doctors during the five years I have been suffering from the *tumour*, not having received the slightest benefit. Dear Sir, you are at liberty to publish this, or send anyone to my residence for satisfaction.—I am, Sir, yours most respectfully,

TO MR. BURGESS.

MRS. H. GRIFFIN.

(The above was a most serious case. Photographs of the same, uncured and cured, and the Fungus and Diseased Bone drawn away by the Ointment, can be seen on application at 117 High Holborn, W.C.)

7 SHAFESBURY PLACE, ALDERSGATE STREET, E.C.: May 20, 1882.

SIR.—It gives me great pleasure to add to your numerous testimonials. For four years I suffered with a very bad leg, and attended St. Bartholomew's, the University, and Dalston Hospitals, and various Dispensaries, where they told me it was a cancerous ulcer, incurable, *that I must lose my leg*. However, being recommended to use your Lion Ointment, I did so, and in three months the cancer was drawn away, and my leg made quite well.—I remain, yours &c.,

TO MR. E. BURGESS.

LUCY IBBS.

VERULAM, PORT NATAL, SOUTH AFRICA: March 1, 1881.

DEAR SIR.—I feel it my duty to thank you for the wonderful way in which your Lion Ointment has cured my hand of skin disease, which I have endured for over two years. When I first came to St. John's Hill, and was advised to purchase a box of your Ointment, and by the end of a month it had perfectly cured my hand, and I have seen nothing of it since. Previously to applying your Ointment, I had been to my own doctor at Wandsworth with it, and also to several Skin Disease Hospitals in London, but to no avail. They said it could not be cured, and must, therefore, be endured; but, as I said before, your Ointment has cured it. When I came out here (two months ago), I brought some with me, and am glad I did, for I have found it very useful. I gave some to a gentleman who had his legs covered with Natal sores, and could not walk for them, and it has perfectly cured them. I have been obliged to send home to my friends to send me out some, which I expect shortly to arrive, for, as I said before, it is very useful; in fact, cures everything in which I have tried it. If only you had an agent here, I would recommend it to everybody.—I am, dear Sir, yours, &c.,

MR. BURGESS.

SUSAN S. SMITH.

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Pharmacopœia, Throat Hospital, Proprietary,
SPECIALITY LOZENGES.

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Price Lists and Samples free on application.

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Importer of Norwegian, Newfoundland, & other varieties.
Low Quotations on application. Delivered at London or Liverpool.

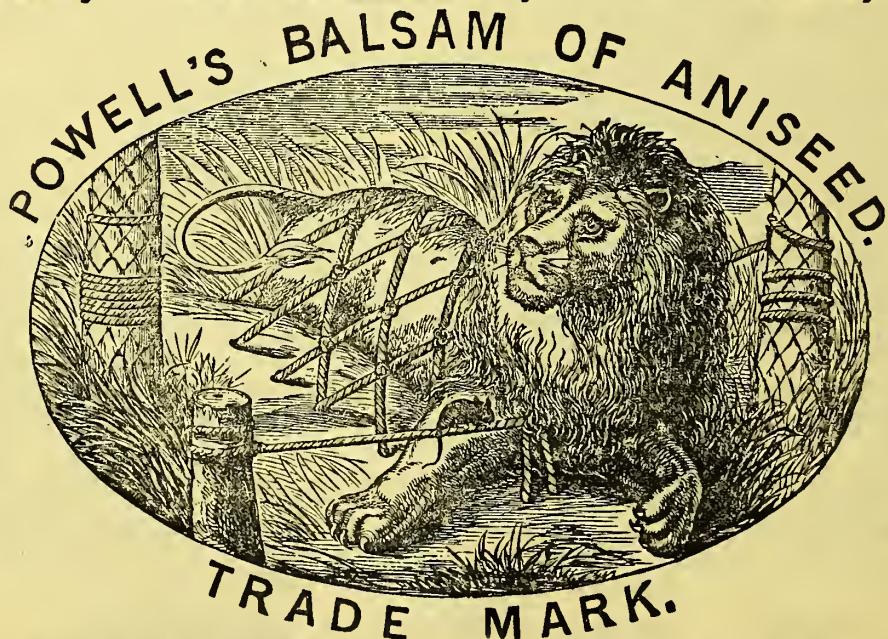
WHITE & CO., SUCCESSORS TO **E. GOULD & SON,** 20 BISHOP'S ROAD
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DISPENSING BOTTLES—All kinds in GREEN and WHITE FLINT GLASS.

In consequence of the growing demand for our Dispensing Bottles we have found it necessary to increase our powers of production, and are now in a position to execute orders for same promptly.

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Fitted in a variety of styles.

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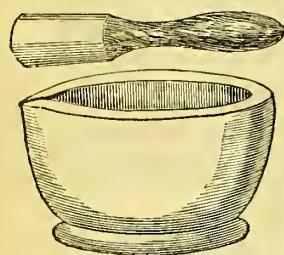
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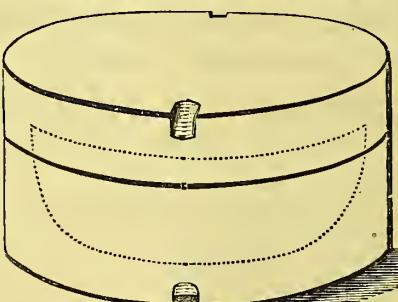
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ARE CLAIMED TO BE THE MOST PERFECT AND CONVENIENT YET OFFERED TO THE TRADE, AND POSSESS THE FOLLOWING ADVANTAGES:

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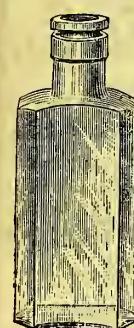
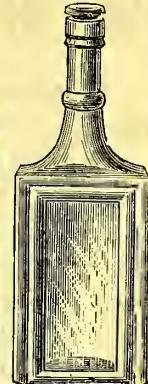
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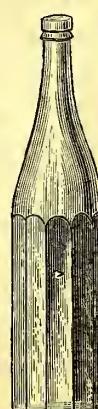


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6 ozs., 10 ozs., 15 ozs. Fluid.
of this shape pot.



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WITH METALLIC NICKELLED CAPSULES.

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1 & 2-ounce	6/6 per gross	14-ounce	15/- per gross
3 & 4 "	7/9 "	16 "	15/9 "
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1 ounce ..	4/6 "	2 ounce ..	6/- "
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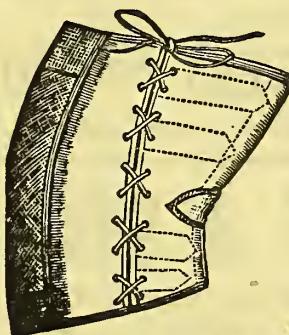
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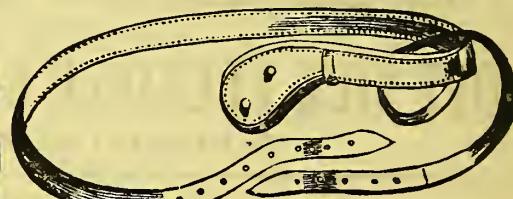
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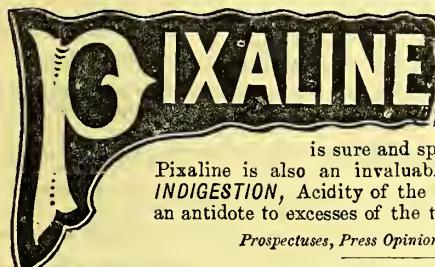
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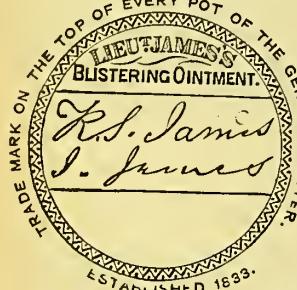
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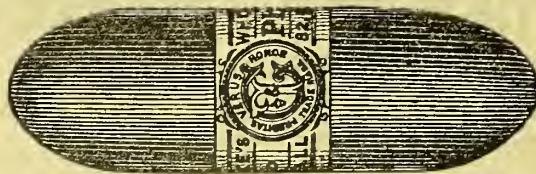
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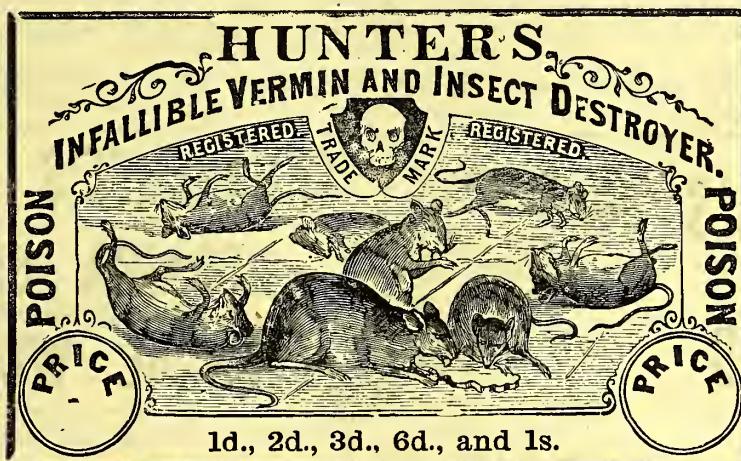
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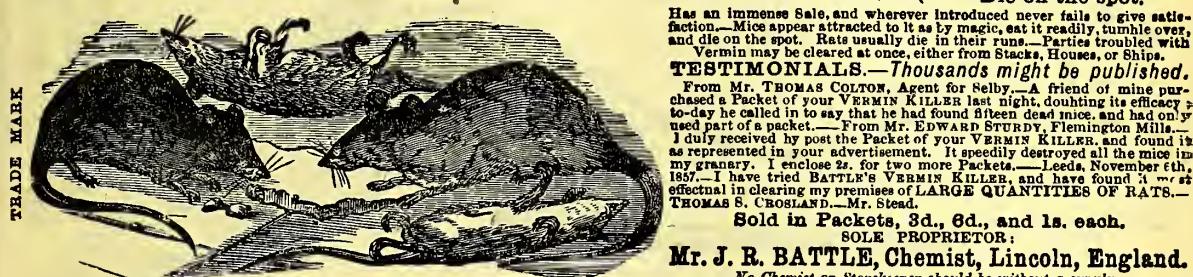
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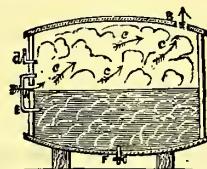
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For further particulars

See the Chemists' and Druggists' Diary, 1884, page 274

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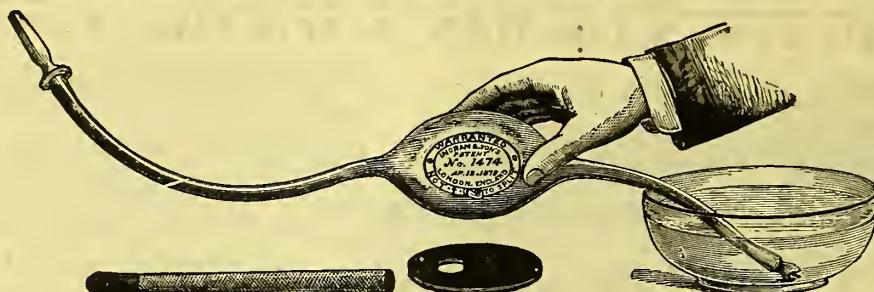
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Made without Seams or Ribs by our Patent Process of dipping in a solution of India Rubber, thus adding great strength and durability.

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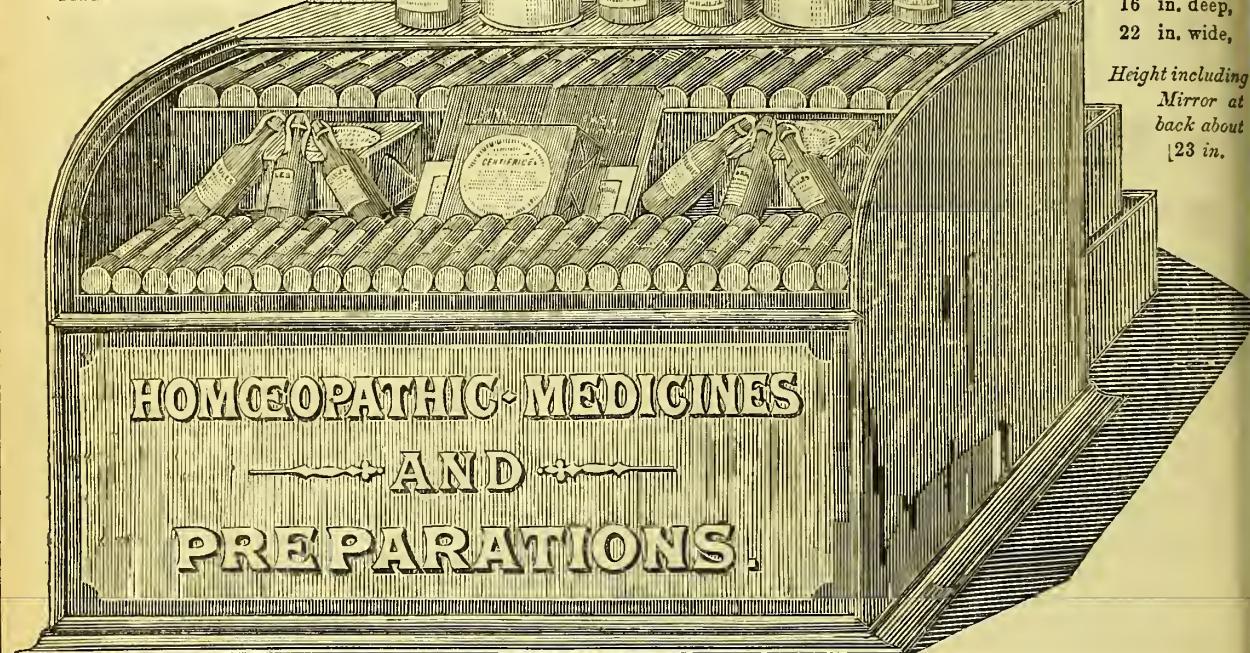
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